COVID-19, GLOBAL

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Overall global risk and confidence

Overall risk
Global
Moderate

Confidence in available information
Global
Low

Overall risk statement

At the end of 2025, the global public health risk from COVID-19 remained moderate, following the declining deaths and hospitalizations in 2022 due to high population immunity, improved clinical management, and similar virulence and characterized by sustained stability in severity indicators—including ICU admissions and in hospital mortality—throughout the following years. Most SARS-CoV-2 variants now belong to the JN.1 Omicron sublineages, which show immune escape but do not result in increased disease severity compared to other Omicron sublineages. Nonetheless, continued surveillance gaps, reduced genomic sequencing and sharing of sequence information, and limited reporting, especially from low- and middle-income countries, undermine a more informed risk assessment at this time. SARS-CoV-2 continues to circulate widely, as indicated by sentinel surveillance under GISRS and wastewater surveillance, co-circulating with seasonal influenza and Respiratory Syncytial Virus (RSV). Post COVID-19 condition is estimated to affect around 6% of symptomatic cases, with reduced risk in vaccinated individuals. WHO has developed the Strategic Plan for Coronavirus Disease Threat Management (2025–2030) which continues to encourage integration of COVID-19 into broader respiratory disease surveillance systems and recommend vaccination of populations at high-risk of severe disease. While available vaccines remain effective against severe disease and death despite continued variant evolution, global vaccine uptake among high-risk groups was very low in 2025. Overall, while the direct impact of COVID-19 has lessened since 2022, ongoing circulation and virus evolution in human populations and established animal reservoirs, low vaccine uptake, and insufficient burden and genomic surveillance data contribute to continued uncertainty, requiring constant vigilance.

Risk questions

Risk question		Assessment		Risk	Rationale
		Likelihood	Consequences		
Potential risk for human health?	Global	Likely	Minor	Moderate	▪ Evidence of decreased impact on global morbidity and mortality associated with COVID-19 since 2022, driven by a) increasing population-level immunity from infection and/or vaccination, b) similar levels of severity observed in the currently circulating Omicron SARS-CoV-2 descendant lineages, and c) improved clinical case management. Available data from a limited number of countries show: ▪ The number of reported COVID-19-associated deaths per 1000 reported hospitalizations has remained generally stable since mid-2022, fluctuating between 30 and 100 deaths per 1000 hospitalizations, following a decline from 246 deaths per 1000 hospitalizations observed in February 2021. ▪ Global seroprevalence, estimated to have risen to 90% in April 2022 (last robust estimate available), indicating high population-level humoral immunity due to vaccination and/or infection given the widespread continued circulation of Omicron descendent lineages. ▪ Data from limited number of countries in 2023 also showed seroprevalence levels of 90% or greater, indicating very high levels of population immunity. ▪ For those with severe immunosuppression or multiple risk factors, COVID-19 remains a serious acute disease. ▪ Post-acute and long-term manifestations: estimates show that 6% of symptomatic cases progress to develop Post COVID-19 condition (PCC), with 15% among them having persistent symptoms even at 12 months. Our understanding of the condition remains limited. Other non-PCC, long-term sequelae affecting multiple organ systems contribute to additional morbidity and mortality, particularly cardiovascular and cerebrovascular disease. ▪ Despite improved access to COVID-19 vaccines, demand for and uptake of COVID-19 vaccines is currently very low at the global level. Very low proportions of those at highest risk of severe COVID-19 reported to be up to date on their COVID-19 vaccination. This puts large numbers of people at continued risk for severe disease, hospitalization and death. ▪ There are/remain substantial variations among detection and response capacities in fragile and conflict-affected settings. Large population movements and increasing conflict are drivers for the propagation of respiratory illnesses, when capacities to respond remain inadequate.

Risk of event spreading?	Global	Highly likely	Moderate	High	▪ Results from integrated surveillance of SARS-CoV-2 within GISRS show its continued circulation globally, without a predictable seasonal pattern. Circulation intensity varies globally. Some countries from both Southern and Northern Hemispheres observe multiple peaks of activity throughout the year, some coinciding with the Influenza season which increases stress on health-care facilities. ▪ Efforts towards inclusion of SARS-CoV-2 into integrated sentinel respiratory disease surveillance systems continue. 75% of Member States (MS) reported SARS-CoV-2 data to GISRS at least once in 2025, with varying completeness and timeliness. Achieving representative global coverage remains the long-term goal and currently needs to be supported by complementary surveillance methods, such as wastewater surveillance. ▪ The continuing reduction in the number of RT-PCR-based tests conducted and reported as well as in the number of sequences submitted to publicly accessible databases hampers WHO and TAG-VE efforts to detect, assess, and monitor the circulation and characteristics of current and emerging variants and the overall SARS-CoV-2 variants landscape. Based on available data, the recombinant XFG is currently the most prevalent SARS-CoV-2 variant, showing a decreasing trend in proportion, since peaking in late October 2025. Currently circulating variants cause similar or lower levels of disease severity compared to previous variants of concern (VoCs), while exhibiting slightly higher transmissibility and immune escape properties. However, the possibility of a more severe variant emerging in future remains as illustrated by the recently designated VUM BA.3.2 – a descendent of an earlier Omicron BA.3 lineage with substantial antibody escape compared with earlier Omicron and current vaccine antigen; however due to its reduced infectivity, it doesn't pose a higher public health risk compared to other circulation variants. ▪ Most countries have lifted the majority, if not all, of their public health and social measures, which increases the risk of virus spread. At present, reimplementing strict measures, should the need arise, appears unlikely to be viable.
Risk of insufficient control capacities with available resources	Global	Likely	Moderate	High	▪ The overall risk of severe outcomes associated with SARS-CoV-2 has declined globally since 2022, leading to an improved capacity of health systems to cope with COVID-19 and other health threats. ▪ All WHO regions have made continuous efforts to enhance their capability to detect and manage COVID-19. Although most MS face challenges in maintaining and sustaining surveillance efforts, several countries have shown the capacity to rapidly scale up diagnostic testing in the event of a resurgence driven by emerging SARS-CoV-2 variants. ▪ However, some countries have and may continue to experience stress in health systems due to co-circulation of SARS-CoV-2 with other respiratory and non-respiratory viruses such as Influenza, RSV, Dengue and Chikungunya. ▪ Maintaining and enhancing infection prevention and control (IPC) measures in the event of a resurgence remains critical as does increasing workforce capacity in response. ▪ A variant associated with high clinical severity could emerge in future and once again overwhelm health systems.

Major actions recommended by the risk assessment team

	Action	Timeframe
☐	Refer the event for review by IHR Emergency Committee for consideration as a PHEIC by DG (Art 12, IHR)	Not applicable
☐	Immediate activation of ERF response mechanism (IMS) as urgent public health response is required	Not applicable
☐	Recommend setting up of grading call	Not applicable
☐	Immediate support to response, but no grading recommended at this point in time	Not applicable
☐	Rapidly seek further information and repeat RRA (including field risk assessment)	Not applicable
☐	Support Member State to undertake preparedness measures	Not applicable
☒	Continue to closely monitor	Continuous
☐	No further risk assessment required for this event, return to routine activities	Not applicable

Global strategic objectives (Immediate actions)

The WHO Director-General issued Standing Recommendations to Member States (MS) to offer immediate, actionable guidance to countries to support the effective COVID-19 management. Released alongside the Director-General's decision that COVID-19 is an established and ongoing health issue which no longer constitutes a public health emergency of international concern (PHEIC), the Standing Recommendations remain in effect through 30 April 2026. The full set of Standing Recommendations is available on the WHO website.

The Strategic Plan for Coronavirus Disease Threat Management (2025–2030) was launched on 2 December 2025. This plan sets out the global framework for the sustained, integrated, and evidence-based management of coronavirus disease threats, including COVID-19, MERS, and potential novel coronavirus diseases of public health importance, covering the 2025-2030 period. Building on the experience of the past six years of COVID-19 response and ongoing work on MERS and other respiratory viruses, the Strategic plan:

- **Establishes a long-term approach to coronavirus disease threat management** within broader respiratory and other infectious disease control programmes;
- **Articulates high-level strategic directions to support Member States** in the management of coronavirus disease threats, sustaining advances made while closing remaining gaps; and
- **Consolidates relevant, existing WHO guidance** across the key pillars of WHO's HEPR framework: surveillance, community protection, safe and scalable care, access to and delivery of medical countermeasures, and coordination.

To support MS in implementing the Standing Recommendations and the Strategic Plan, WHO maintains a series of COVID-19 policy briefs. These policy briefs summarize and distil the latest WHO guidance into key steps for MS and provide links to further information.

Supporting information

Hazard assessment

Virus origins

While available information is insufficient to definitively conclude the origins of SARS-CoV-2, the independent assessment of SARS-CoV-2 origins report (June 2025) published by the Scientific Advisory Group for the Origins of Novel Pathogens (SAGO) reviewed all available evidence for each of the two main hypotheses: introduction from a natural zoonotic source(s) as a spillover event(s) either directly to humans from wild animals or through an intermediate host, **or** an accidental laboratory-related event, which may have involved exposure to the virus during field research or a breach in laboratory biosafety procedures. It concluded that while a zoonotic origin with spillover from animals to humans is currently considered the best supported hypothesis by the available scientific data, until requests for further information are met or more scientific data becomes available, the origins of SARS-CoV-2 and how it entered the human population will remain inconclusive.

Virus evolution and variants

Omicron, the last designated variant of concern (VOC), has accounted for 97% of all submitted sequences since January 2022. Omicron has diversified considerably, giving rise to more than 3200 descendent lineages. All Omicron descendent lineages share similar phenotypic characteristics, namely higher transmissibility due to immune escape properties and lower apparent disease severity as compared to pre-Omicron variants.

WHO continuously updates its tracking system and definitions for variants of SARS-CoV-2 to reflect the current global variant landscape. At present, WHO is monitoring one designated variant of interest (VOI), JN.1, and five designated variants under monitoring (VUMs): KP.3.1.1, LP.8.1, NB.1.8.1, XFG, and BA.3.2. All the VUMs are descendent lineages of JN.1 except for BA.3.2 which is a descendent lineage of an earlier Omicron BA.3. Between epidemiological weeks ending on 9 November 2025 and 30 November 2025, the VOI JN.1 showed a slight overall decrease in proportion from 5.0% to 4.5%. During the same period, the VUM XFG remained dominant with a slight overall decrease from 71.2% to 69.9%, NB.1.8.1 fluctuated but showed a marginal net decrease from 14.3% to 14.2%, LP.8.1 decreased from 1.2% to 0.6%, KP.3.1.1 increased slightly from 1.6% to 1.8%, while BA.3.2 increased from 1.1% to 3.5%.

Risk evaluations on the current VOI and VUMs indicate they do not pose additional public health risks as compared to other currently circulating SARS-CoV-2 lineages.

Despite advances in sequencing capacity made during the pandemic, low, unrepresentative levels of genomic sequencing and/or sharing of sequence information pose significant challenges to the assessment of the SARS-CoV-2 variant landscape. Between July and November 2025, a total of 89 569 sequences were shared globally by 95 countries. This marks a decline compared to 106 206 sequences shared by 109 countries between January and July 2025. While a decline in SARS-CoV-2 genomic sequencing is expected compared to the early pandemic years, the current low volume of sequences also reflects limited geographic representation, primarily from high income countries, with significant delays in sequencing and data sharing from the time of sample collection. Representative levels of genomic sequencing and sharing of sequence information in a timely manner are essential for adequate, robust monitoring of existing SARS-CoV-2 variants and early detection and rapid assessment of emerging ones. WHO urges MS to maintain public reporting and publishing of genetic sequences with relevant meta-data.

The Technical Advisory Group on Virus Evolution (TAG-VE) continues to meet as needed to assess available evidence on circulating SARS-CoV-2 variants. Previously specific to SARS-CoV-2, TAG-VE now has broadened its terms of reference to include other priority viruses with epidemic and pandemic potential, including monkeypox virus (MPXV) and Middle East respiratory syndrome coronavirus (MERS-CoV). Complementing the work of TAG-VE, the Technical Advisory Group on COVID-19 Vaccine Composition (TAG-CO-VAC) also continues to meet regularly to assess the impact of changing variant circulation in the context of determining COVID-19 vaccine composition recommendations, as further described in below vaccine-related sections.

Human-animal interface

In addition to humans, SARS-CoV-2 can infect domesticated and wild animal species. The latest emerging zoonotic coronaviruses in animals situation update (1) from the Food and Agriculture Organization of the United Nations (FAO) on 18 December 2025 lists 68 species across 49 countries (no cumulative number of events cited). Official reporting via WAHIS to the World Organisation for Animal Health (WOAH) totals 775 events in 29 species across 36 countries as of 24 Oct 2023 (2). A database maintained by the SARS-ANI consortium (3) has a cumulative number of 929 events in 42 species across 40 countries (as of 26 Mar 2025). Additional species have been shown to be susceptible in experimental studies.(1)

SARS-CoV-2 surveillance in susceptible animal populations, including whole genome sequencing of virus isolated from animals and traceback investigations, remains fragmented due to the cost and difficulties in appropriate target/site selection preclude formal surveillance in wildlife at a global level; most positive findings to date are the result of research activities. The largest outbreaks detected and investigated in animals to date have been in European farmed mink (4) and in wild, North American white-tailed deer since 2021, the latter including vertical transmission to their offspring(5). Sampling wildlife from May 2022–September 2023 across Virginia and Washington D.C. (USA) (6) further detected SARS-CoV-2 ribonucleic acid (RNA) in six of 23 species sampled, including the deer mouse, Virginia opossum, raccoon, groundhog, Eastern cottontail, and Eastern red bat, confirming wider spread in additional wild animal populations. A study from Brazil (7) confirmed SARS-CoV-2 spillover from humans to opossums (*Didelphis albiventris*). A recent publication surveyed 27 species (889 samples) and suggested that SARS-CoV-2 circulation is decreasing in animals. (8) While some species have been shown to develop severe illness from SARS-CoV-2 infection, including mink (9) and hamsters (10) , most species exhibit mild or no symptoms. Large-scale outbreaks in wild animals known to develop severe disease, with the potential for ecosystem disruption, have not been observed or described.

Regarding farm animals such as poultry, swine, and cattle, laboratory infection studies indicate that they are resistant to infection and do not shed virus. Studies have revealed varying percentages of SARS-CoV-2 infections in companion animals of infected owners. Available evidence suggests (11) however, that they do not significantly contribute to disease spread (11). As companion animals are not commonly kept in larger groups, continuous circulation, enabling long-term viral evolution, is unlikely. Free roaming, infected (domestic or feral) cats, which shed the virus, may have acted as potential low risk vectors in the context of the inter-farm spread of the mink farm outbreaks in Europe. (12)

Animal-to-human transmission has been rarely documented : from mink (Europe/USA), Syrian hamsters (Hong Kong SAR, China), cat (Thailand), and white-tailed deer (USA) after close contact. (13) To minimize this risk, WOAH

and FAO have released several guidance documents for professionals working with animals. Significant concerns remain regarding ongoing SARS-CoV-2 circulation in animals and the establishment of animal reservoirs, potentially leading to accelerated virus evolution, adaptation of the virus to novel hosts and ecological impacts. Additionally, recombination of SARS-CoV-2 with other coronaviruses- widespread in the animal kingdom- is plausible. The persistent circulation of earlier, more pathogenic variants such as Alpha in white-tailed deer populations in the USA (14) alongside with Omicron sublineages could also lead to recombination events in animal reservoirs or human hosts following a spillback. Both present the risk of the introduction of novel variants back into the human population. In addition to this risk to human health, viral evolution could lead to changes in animal susceptibility, virus transmissibility among animals (intra- and inter-species), including disease severity in susceptible animals. Robust surveillance targeted at known animal reservoirs (e.g. mink, white-tailed deer) and appropriate control measures in animals are needed to adequately characterize and reduce such risks.

The joint statement by WHO, FAO and WOAH in 2022 on the prioritization of monitoring SARS-CoV-2 infection in wildlife and preventing the formation of animal reservoirs calling for increased monitoring of SARS-CoV-2 infection and circulation in wildlife and for action to prevent the formation of animal reservoirs - which includes white-tailed deer and species farmed for fur - continues to be relevant in 2026. WOAH has released guidance documents to support MS in conducting surveillance for SARS-CoV-2 in animals (15) and General Guidelines for Surveillance of Diseases, Pathogens and Toxic Agents in Free-ranging Wildlife.(16)Several experimental veterinary SARS-CoV-2 vaccines have been developed, with limited use in zoos and the fur industry. (17)

Infection and transmission

SARS-CoV-2 continues to spread mainly through infectious respiratory particles (IRPs) that can transmit through the air from an infected person to an uninfected person, to be inhaled or deposited on a surface. This occurs primarily among those in close contact with each other within conversational distance or within closed rooms in poorly ventilated indoor areas. In these situations, the virus can travel from an infected person's mouth or nose as infectious particles when they cough, sneeze, speak, sing, or breathe. An uninfected person can then contract the virus when these IRPs are inhaled (airborne transmission/inhalation) or if they are directly deposited on the mucous membranes of the eyes, nose, or mouth (direct deposition, or droplet transmission using earlier terminology). The virus can spread more easily in poorly ventilated and/or crowded indoor settings where people spend long periods of time. In these situations, IRPs can remain suspended in the air for longer or travel further than between individuals at conversational distance (airborne transmission/inhalation). Individuals may also become infected by touching their eyes, nose, or mouth after caring for or shaking hands with a person with SARS-CoV 2 infection (direct contact transmission) or after touching surfaces or objects that have been contaminated by the virus (indirect contact transmission).

WHO, in collaboration with partners, continues to monitor modalities of SARS-CoV-2 transmission and has published a Global technical consultation report on proposed terminology for pathogens that transmit through the air and developed several tools to support measuring and assessing SARS-CoV-2 transmission. Among them, the Indoor Airborne Risk Assessment in the context of SARS-CoV-2 (ARIA) tool, designed in collaboration with the European Organization for Nuclear Research (CERN), supports the assessment of SARS-CoV-2 airborne transmission risk in indoor spaces of residential, public, and healthcare settings. Through this tool, users can calculate their risk of airborne transmission of SARS-CoV-2 in indoor settings and take appropriate mitigation steps. The tool uses evidence-based variables to inform preventive measures to significantly reduce the risk of transmission.

Clinical spectrum of disease

SARS-CoV-2 infection continues to cause the full spectrum of disease, from asymptomatic and mild disease to severe disease and death. Most individuals experience mild to moderate symptoms, with many others asymptomatically infected; the severity of disease as judged from absolute numbers of reported deaths and hospital admissions has reduced significantly over time due to the high level of immunity achieved through vaccination and/or infection.(18) The predominant symptoms have remained broadly similar throughout the pandemic, although the relative prevalence of certain symptoms over time appear to have changed (for example, altered sense of smell/taste was previously more dominant). However, the limited testing and sequencing makes it difficult to obtain a comprehensive understanding of clinical symptoms and severity across more recent

descendent lineages. Existing laboratory and epidemiological studies (19–22) on current SARS-CoV-2 VOI JN.1, which is also the ascendent lineage of all currently circulating VUMs, have not identified increased disease severity. (23)

WHO's living guideline on clinical management provides evidence-based information on the clinical management of COVID-19, including on the clinical spectrum of disease. Clinical and therapeutic guidelines are available from WHO (WHO Living Guidelines on Therapeutics for COVID-19 and WHO Living Guidelines on Clinical Management of COVID-19). Both have been updated since June 2025. These guidelines continue to recommend the use of therapeutics to reduce hospitalization amongst those at highest risk and to reduce mortality in hospitalized patients. Access to recommended medications, including nirmatrelvir, IL-6 receptor blockers and baricitinib, remains limited in some countries. Systemic corticosteroids are strongly recommended in severe disease. New advice for severe disease includes strong recommendations against the routine use of SGLT-2 inhibitors (the "gliflozins") and statins. The optimal use for heparin has also been clarified with a conditional recommendation for prophylactic dose.

Children and infants

Children exhibit similar clinical manifestations of COVID-19 as adults, though typically with milder and less frequent symptoms, and with significantly lower rates of severe disease. Based on data from the WHO Global Clinical Platform on 50 351 COVID-19 cases in children and adolescents, a WHO analysis incorporating data from January 2020 to December 2022, found that disease severity decreases with increasing age within paediatric groups, with infants having the highest mortality risk, comparable to that of adults aged 20-45 years. Fever was the most frequently reported symptom in the paediatric population, observed in 55.3% (6612/11 965) of cases. After adjusting for age and sex, the study found that the presence of underlying conditions, including HIV, chronic cardiac disease, diabetes, and pulmonary disease, increased the risk of presenting with severe disease at hospital admission. Infants may also have feeding difficulties and fever without an obvious source. Seizures have been reported more frequently as a primary manifestation in children admitted to emergency departments than adults hospitalized with COVID-19. More recent data remain limited but confirm at high level the differences between adults and children in terms of severity and presentation.

The multisystem inflammatory syndrome in children (MIS-C) is a rare, life-threatening complication associated with immune reactions, targeting the body's own proteins (24), triggered by acute COVID-19 infection. MIS-C has become less frequent since the start of the pandemic with a 95% reported reduction in cases during the Omicron variant period and after widespread vaccination. (25)

Pregnant women

WHO gathered and analysed anonymized data from patients with suspected or confirmed COVID-19 through the WHO Global Clinical Platform between March 2020 to March 2023. Fifty-seven countries reported 165 761 cases in pregnant women, from which there were 2921 detailed observations for hospitalized pregnant women and of these 1815 women who gave birth during their hospitalization. Risk factors associated with severe and fatal COVID-19 in pregnancy were similar to those in the general population, including advanced age, diabetes and hypertension. Pregnant women admitted to hospital were less likely to have severe/critical COVID-19 on admission, to be admitted to the intensive care unit (ICU), or to die compared with non-pregnant women of reproductive age. Data from the USA show that pregnant women receive antivirals (specifically nirmatrelvir-ritonavir) at considerably lower rates than non-pregnant women, suggesting missed opportunities for treatment of severe disease.(26)

Post-acute and long-term health effects of SARS-CoV-2 infection, including Post COVID-19 Condition (PCC)

Available estimates, dating from 2022, suggest that 6.2% of individuals (95% CI 2.4% - 13.3%) with symptomatic acute SARS-CoV-2 infection will go on to develop post COVID-19 condition (PCC), characterized by new persistent symptoms that last for weeks or months following the initial, acute episode of COVID-19. (27) Most PCC cases are reported to occur after mild acute illness, with females more frequently affected (OR, 1.56; 95% CI, 1.41-

1.73).(27,28) Higher rates of PCC were also observed in individuals who were hospitalized. In contrast, lower rates were noted among those who had received prior vaccination. Accurately gauging the burden and relative risk of PCC remains challenging due to unreliable infection rate and other disease surveillance data. While recent data suggest PCC may occur at lower rates now than earlier in the pandemic, the persistently high levels of SARS-CoV-2 transmission mean that even reduced PCC incidence can still translate into a substantial number of overall PCC cases.

The symptoms of PCC are diverse, but the most frequent symptom clusters occur around shortness of breath, fatigue, and cognitive problems.(29) WHO has established clinical case definitions for PCC in both adults and in children. The molecular and cellular mechanisms and causes of PCC are many and varied between individuals. Three main mechanistic themes predominate in research, but they overlap in any individual: 1) Persistence of parts of the SARS-CoV-2 virus in the body, causing direct harm to cells, and interacting with other common but frequently dormant viral infections (such as Ebstein-Barr); 2) Inflammation resulting from dysregulated immune responses to SARS-CoV-2, resulting in harm to the body's own tissues; 3) Alteration of clotting mechanisms, causing "micro-clots" and other damaging effects in the blood vessels and organs.(30)

There is currently no treatment suitable for all patients with post COVID-19 condition, and given the wide variety of mechanisms, future treatments will likely be tailored to the causes in that individual. The search for reliable biomarkers of mechanisms and response continues. People experiencing persistent limitations in daily functioning, or a protracted course of PCC will require person-centred, comprehensive and multidisciplinary rehabilitation services delivered in collaboration with primary care practitioners and several medical specialties. There are many ways that PCC can manifest. Using treatments from similar conditions can be effective. For example, for fatigue and post-exertional dyspnoea, for dizziness related to blood pressure regulation (postural orthostatic tachycardia syndrome, POTS), and for hypersensitivity (mast cell disorder). General approaches to rehabilitation can also be very useful (see WHO's Living guideline on clinical management).

In addition to the symptoms and functional impairment related to post COVID-19 condition, other illnesses can be provoked in the aftermath of acute COVID-19 illness. These can also affect different organ systems and include, but are not limited to, cardiovascular and neurological events (such as stroke), and kidney and lung impairments. Subsequent reinfections with SARS-CoV-2 are associated with higher hazards and excess burden of these conditions.(31)

Exposure assessment

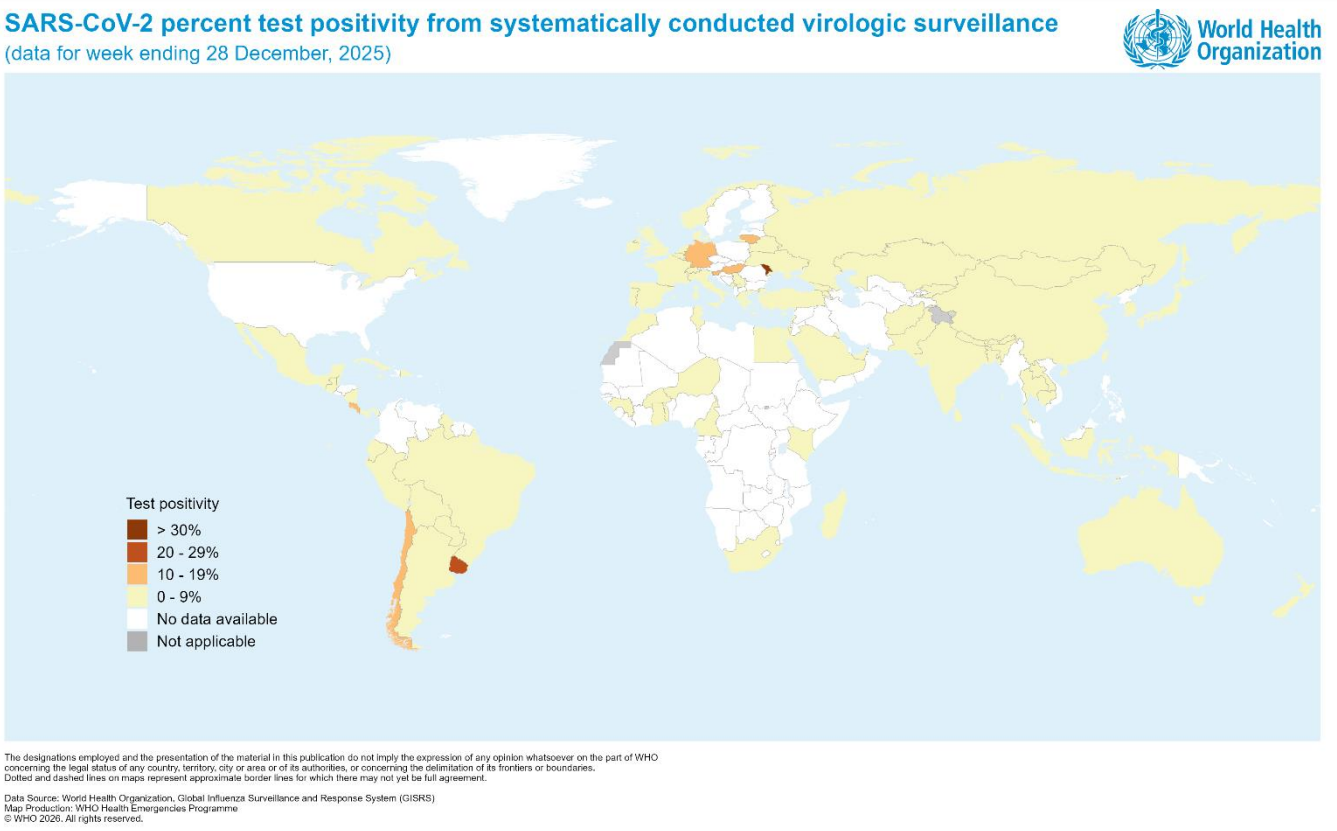
Circulation

Many countries have transitioned from testing every individual case to more sustainable surveillance strategies, such as integrating SARS-CoV-2 / COVID-19 into existing disease surveillance systems like the expanded Global Influenza Surveillance and Response System (GISRS) or Integrated Disease Surveillance and Response (IDSR) systems. As a result, test positivity rates from sentinel or other systematic testing sites and SARS-CoV-2 RNA concentrations in wastewater have become more reliable indicators of circulation than incidence rates. In 2025, as of 28 December 2025, more than 14 million specimens have been tested for SARS-CoV-2 and reported to the global GISRS platform (RespiMart) from both sentinel and non-sentinel sources. Overall, 75% of MS (n = 146 out of 194) have reported SARS-CoV-2 data. This represents a stable trend in number of countries reporting SARS-CoV-2 data to e-GISRS globally as compared 2024 (75%).

The integration of SARS-CoV-2 into existing respiratory diseases surveillance systems like GISRS is proceeding at different rates across regions, however, the proportion of countries reporting SARS-CoV-2 specimen counts regardless of surveillance type information at least once ranges between 56% in the Western Pacific Region (WPR) to 87% in the European Region (EUR). The integration of severity and impact surveillance which requires disaggregation of data by case definitions is even more limited. From 30 December 2024 to 28 December 2025, 29% of MS (n = 57) provided Severe Acute Respiratory Illness (SARI) due to SARS-CoV-2. This represents a decrease compared to 2024 when 34% (66 MS) reported. The 56 reporting MS are concentrated in just three regions: 25 out of 53 in the European Region, 18 out of 35 in the Americas region (AMR), 13 out of 21 in Eastern

Mediterranean region (EMR), and 1 out of 27 in WPR.

Figure 1: Countries reported SARS-CoV-2 specimen test positivity rates from systematic testing to GISRS for week ending on 28 December, 2025 (Data source: GISRS – RespiMART)



As of the week ending on 28 December 2025, SARS-CoV-2 activity was generally low, though elevated activity were reported in some countries in South America, Northern, and Eastern Europe with test positivity rates exceeding 10% at sites using systematic testing approaches.

Overall, in 2025, SARS-CoV-2 continued to circulate widely alongside other respiratory pathogens but has yet to establish clear seasonality. Elevated activity was reported in many Northern Hemisphere countries, though at lower intensity than last year and without an early winter peak. From mid-February to late May, sentinel surveillance showed increased positivity in parts of the Eastern Mediterranean, South-East Asia, and Western Pacific. In response WHO issued a Disease Outbreak News on global COVID-19 situation, with particular attention to these three regions. Since May, Europe experienced rising trends, followed by slower increases in North America in August, with declines noted since late September. Southern Hemisphere countries followed a similar pattern, with increases in activity in summer months but lower levels than last year and without a winter peak.

Wastewater and environmental surveillance

An increasing number of countries are now monitoring SARS-CoV-2 concentrations and circulating variants in wastewater as part of their surveillance approaches. This approach helps to understand the intensity of virus circulation and identify variants present in the community as countries shift to less broad, more targeted testing strategies. Wastewater surveillance can serve as an early warning tool for detecting a potential upsurge in hospitalizations given the lag between infection and hospitalization. According to estimates obtained from viral loads in wastewater surveillance, clinical detection of cases may underestimate the real burden by as much as 2 to 33 times. (32–34)

As of 28 December, around 32 MS across five WHO regions have made routine wastewater surveillance information publicly available. The list of these countries and access to their dashboards or reports can be found on the wastewater section of the WHO Global COVID-19 dashboard. For the weeks between 10 November and 14 December 2025, 22 countries updated their data at national or sub-national levels. While no country reported high concentration levels, ten reported moderate levels, and 12 reported low levels. Most of these countries showed an increasing trend (12 out of 22) – primarily in Europe. Ten countries have also reported data on SARS-

CoV-2 variant distribution in wastewater. Several of these countries have either ceased submitting genomic surveillance data from clinical samples entirely or continue to submit only a minimal number of sequences with considerable delays. Consequently, wastewater surveillance has become a complementary mean for monitoring the circulating SARS-CoV-2 variants in these countries.

Detailed surveillance

WHO continues to monitor COVID-19 cases, hospitalisations, ICU admissions, and other surveillance indicators. Following the end of the PHEIC in May 2023, WHO released an addendum to the Public Health Surveillance of COVID-19 interim guidance outlining the minimum set of COVID-19 indicators that MS should share with WHO. As Member State surveillance strategies continue to evolve, however, reductions in laboratory testing and increased use of unreported self-testing for mild cases limit representativeness. As a result, to complement information from test positivity and wastewater surveillance described above, understanding COVID-19-related hospitalizations has become key. WHO continues updating its COVID-19 surveillance platform weekly, even though only a limited number of MS continue submitting data.

As of 28 December 2025, over 779 million confirmed cases have been reported globally to WHO, while seroprevalence estimates suggest that there are orders of magnitude more infections and reinfections that remain unreported. In 2025 as of 28 December, over 1.7 million cases and over 26 400 deaths have been reported to the WHO, from 110 countries reporting at least one case and 46 countries reporting at least one death during this period. In comparison, in 2024, more than 3.5 million cases and 67 700 deaths were reported, from 141 countries for cases and 75 countries for deaths. While the number of reported cases is decreasing since mid-2022, with concurrent decline in both global testing rates and the number of countries reporting these data, sentinel site test positivity rates and wastewater concentrations suggest that SARS-CoV-2 continued to circulate widely in communities alongside other respiratory pathogens in all WHO regions throughout 2025. While WHO continues to operate its established pandemic surveillance systems, cumulative case numbers no longer provide an accurate reflection of the current epidemiological situation due to changes in national surveillance and reporting strategies. Despite limitations at the global level, this data remains valuable for assessments at national level. When combined with hospitalization and genomic surveillance data, it supports risk evaluation of emerging variants and informs decisions on their classification (e.g., VOI or VUM). Mortality data also contributes to severity assessments, such as deaths per 1000 hospitalizations.

Monitoring more targeted indicators, such as morbidity metrics (e.g., new hospitalizations and ICU admissions) continues to be important in COVID-19 surveillance and risk assessment. Despite a specific request by WHO to report hospitalization and ICU data, the number of MS reporting such information remained low in 2023, with only 44% (86 MS) reporting at least one new hospitalization and less than 29% (57 MS) reporting ICU admissions. This low reporting trend continued in 2024 and 2025, with the number of MS reporting at least one new hospitalization decreasing to 30% (58 MS) and 21% (41 countries) respectively. Similarly, ICU admission reporting remained limited, with only 22% (42 countries) in 2024 and 16% (32 countries) submitting at least one ICU admission in 2025.

As an indicator of severity, data collected from countries reporting both hospitalizations and ICU admissions show a decreasing trend in number of patients requiring ICU admission per 1000 hospitalizations since July 2021, when the rate was 234 ICU admissions per 1000 hospitalizations which dropped below 60 in October 2022 and to 50 by September 2023. In 2024, the rate increased to 182 ICU admissions per 1000 hospitalizations in March, then fluctuated between 50 and 120 until June 2025. In December 2025 there were 73 ICU admissions reported per 1000 hospitalizations. The causes for these changes cannot directly be deducted from the data but likely include a combination of increases in infection- and/or vaccine-derived immunity, improvements in early diagnosis and clinical care, reduced strain on health systems, change in surveillance systems in place and other factors. It should be noted that it is not possible to infer a decreased (or increased) intrinsic virulence amongst newer SARS-CoV-2 variants from such data.

In the updated policy brief on COVID-19 surveillance, WHO advises MS to sustain surveillance for COVID-19 to meet key strategic public health objectives such as maintaining a minimum level of testing and sequencing, with a focus on long-term monitoring of respiratory pathogens within integrated systems (such as GISRS and IDSR). Additionally, the brief emphasizes the importance of community sentinel sampling, targeted monitoring of high-risk groups, tracking hospital and intensive care admissions and deaths, and effectively detecting and characterizing new variants.

Mortality

As of 28 December 2025, over seven million confirmed deaths had been reported globally to WHO. The number of weekly reported COVID-19-related deaths has been steadily declining, now consistently below 2000 since February 2024. This is a significant decrease compared to previous periods, such as the 6 000 average deaths reported per week in 2023 and the over 24 000 in 2022. Similar to case reporting, the weekly average number of countries (including areas and territories) reporting at least one death has declined from 222 in 2022 to 157 and 74 in the same periods of 2023 and 2024, respectively.

In 2025 (as of 28 December), 26 424 deaths were reported from 46 countries, averaging 510 deaths across 38 countries per week. Since the beginning of 2024, global reporting of COVID-19 deaths has been predominantly driven by countries in the Region of the Americas and the European Region. It is important to note that absence of official reporting to WHO does not imply that COVID-19 related deaths are not occurring in non-reporting countries. The overall decline in reported deaths coincides with a reduction in the number of countries reporting, limiting the interpretation of global trends due to decreased geographic and income level representativeness. As a result, it is difficult to determine with certainty whether the observed decline reflects a true decrease at global level. However, data from mainly high-income countries that have maintained consistent surveillance and reporting indicate a continued downward trend in deaths, likely reflecting increased population-level immunity due to infections and vaccination.

As an indicator of severity, data collected from countries reporting both hospitalizations and deaths showed a decreasing trend in number of deaths per 1000 hospitalizations in February 2021, when it was 246 deaths per 1000 hospitalizations, to under 100 deaths per 1000 hospitalizations as of the end of July 2022. Since mid-2022, this indicator has remained generally stable, with fluctuations between 30 to 100 deaths per 1000 hospitalizations. While the causes for these changes cannot be directly interpreted from data available due to their non-representative nature, they are likely due to a combination of increases in infection- and/or vaccine-derived immunity, improvements in early diagnosis and clinical care, reduced strain on health systems, change in the surveillance systems and other factors. It is not possible to infer a decreased or increased intrinsic virulence of newer SARS-CoV-2 variants from these data.

Nevertheless, the reported figures are an underestimate of the true death toll, which has been estimated by several groups, including WHO. (35) It is worth highlighting that most countries do not differentiate COVID-19 deaths and hospitalizations between those directly caused by SARS-CoV-2 and those testing positive for the virus incidentally. The population aged 65 years and over, and those who are not vaccinated, continue to be most at risk of severe disease and death.

In 2025, 37 countries from the African Region, the Region of the Americas, the European Region and the Western Pacific Region reported deaths with age information which represents a decrease from 42 countries across the Region of the Americas, European Region and Western Pacific Region in 2024. Information on age was available for 25 039 deaths, representing 95% of the total 26 424 reported deaths in 2025. The population 65 years and over constituted 88% of all deaths during 2025. While similar to the figure reported in 2024, it nevertheless represents the highest proportion of deaths attributed to a single age group since the beginning of the pandemic. Those aged 15 to 64 years constituted 11.7% of all deaths, presenting a slight increase from 11.3% compared to 2024. These data were consistently provided by the Region of the Americas and the European Region. When compared, the proportion of deaths among those aged 15 to 64 were higher in the Region of the Americas (13%) than the European Region (5.8%). In 2025, less than 1% (n=187) of reported deaths occurred among children under 15 years of age – a consistent trend since the emergence of SARS-CoV-2. However, a more detailed look reveals that 154 out of 187 (82%) deaths occurred in children under five years old, indicating that this age group remains the most vulnerable compared to older children.

Relative mortality risk for COVID-19 in the context of co-circulation with other viruses

COVID-19 and seasonal influenza represent a substantial burden of respiratory illness among hospitalized patients, particularly during the winter months in temperate climates. As COVID-19 is integrated into broader respiratory virus surveillance systems, understanding its mortality risk in comparison to other respiratory viruses, such as influenza, is important.

Some countries published estimates of in-hospital mortality risk for COVID-19 and seasonal influenza. Using data from a nationwide hospital-based surveillance system in Germany, Dickow J. et al.(36) reported that in-hospital mortality declined from 16.8% among patients with pre-Omicron COVID-19 to 8.4% among those with Omicron COVID-19. The adjusted odds ratio (aOR) for in-hospital mortality compared to seasonal influenza also fell significantly from 3.5 (95% CI: 3.0–4.1) for pre-Omicron variants to 1.6 (95% CI: 1.3–1.8) during the Omicron period. Similarly, Kojima N. et al.(37), using a population-based hospitalization surveillance system in the United States, assessed COVID-19 mortality risk among hospitalized patients from 1 October 2021 to 30 September 2022. This study showed a decline in in-hospital fatality ratios from 14.6% for the Delta variant to 7.9% for Omicron BA.1, 6.0% for BA.2, and 4.6% for BA.5, compared to a seasonal influenza in-hospital fatality ratio of 2.6% during the same period.

These results would suggest that over the course of the pandemic, the comparative mortality risk between COVID-19 and seasonal influenza among hospitalized patients has decreased. This may be explained by the substantial and continuous evolution of SARS-CoV-2, with the emergence and circulation of SARS-CoV-2 variants with greater intrinsic transmissibility and properties of immune evasion, but lower inherent virulence, as well as the protection against severe disease and death conferred by COVID-19 vaccination and/or prior SARS-CoV-2 infection. However, both studies are limited to hospitalized patients and in-hospital deaths, and as such do not estimate true mortality burden from either infection, as deaths occurring outside healthcare facilities are not captured. In addition, the selection of hospitalized patients does not capture the full spectrum of disease severity, particularly mild or asymptomatic cases, which potentially leads to overestimation of the case fatality ratios for both COVID-19 and influenza. Further analyses of the comparative mortality risk for COVID-19 and seasonal influenza derived from observational studies investigating mortality estimates for COVID-19 and influenza are needed.

Population immunity, including vaccination coverage and seroprevalence

From January 2024 onwards, WHO shifted from measuring COVID-19 vaccination coverage since the start of the vaccine rollout to measuring annual vaccination coverage. This change was made to reflect (i) shifts in policy recommendations towards targeting high-risk groups for severe disease while shifting focus away from targeting otherwise healthy individuals and (ii) increasing evidence demonstrating time since last dose received is a more important indicator of vaccine-induced protection than the number of doses received. As such, previous measures of COVID-19 vaccination coverage were frozen as at end of December 2023 and measures of uptake were reset upon transition to the new indicators.

As of the end of 2023, 67% of the total global population had received a complete primary series of a COVID-19 vaccine, and 32% had received at least one booster dose. In older adults, across the MS having reported vaccination rates at least once (n = 158), 83% had received a complete primary series and 61% had received at least one booster dose by the end of 2023. During the same period, 89% of health and care workers had received a complete primary series and 31% had received at least one booster dose across those MS having reported at least once (n = 143). Variations in coverage were observed across income strata in all population groups and, to a lesser extent, across regions. Only 5% of the general population in low-income countries (LICs) had received at least one booster dose, as compared to 49% in high-income countries (HICs). This divide was also seen in booster uptake among older adults, with 4% having received at least one booster in LICs, as compared with 94% in HICs. Generally, the African (AFR), Eastern Mediterranean (EMR), and South-East Asian (SEAR) regions featured lower coverage levels than the other regions. Baseline vaccine-induced immunity levels were therefore heterogenous before the shift to annual uptake monitoring at the beginning of 2024.

COVID-19 vaccine uptake in high-risk groups was low in 2024. Thirteen percent of older adults and 6.42% of health and care workers received a COVID-19 vaccine doses during 2024 across reporting WHO MS. The number of WHO MS reporting COVID-19 vaccination data has decreased over time with 109 of the WHO MS reporting COVID-19 vaccination uptake in at least one population group at least once in 2024. WHO is developing a manual to support countries in monitoring and reporting COVID-19 vaccination data; the manual is anticipated to be published in Q1 2026. This manual addresses frequently identified issues with collecting, validating, and using COVID-19 (and other respiratory virus) vaccination data. Strong variations in uptake were observed in 2024 across regions and income strata in all population groups. Across all groups, the uptake in the AMR, EUR, and WPR was greater than in other regions. In older adults, uptake rates in WPR (38.6%), EUR (16.4%) and AMR (13.1%) were higher than in other regions. Similarly, in health and care workers, uptake in AMR (15.1%), WPR (4.8%), and EUR

(3.7%) was greater than in the other regions. Across income groups, trends varied by population group. In older adults, HICs and LICs had the greatest uptake rates, at 21.0% and 13.9%, respectively, as compared with 6.8% in UMICs and 4.8% in LMICs. In health and care workers, UMICs and HICs featured the greatest uptake rates, with 10.4% and 5.0% reported as having received a dose during the year, respectively, as compared with 2% in LICs and 0.3% in LMICs.

Beyond vaccination data, up-to-date, globally comprehensive meta-analyses on seroprevalence data have not been available since April 2022, due to a sharp decline in the number of serosurveys published. The most recent globally comprehensive meta-analysis, under the WHO Unity Studies, estimated that the global percentage of seropositive individuals was 90% in April 2022, up from 22% in January 2021. In January 2024 WHO conducted a literature search which identified a limited number of studies in eight countries that had since been published, with sampling conducted in 2023 or later. Results from these studies have shown seroprevalence levels of 90% or greater, indicating very high potential levels of population immunity. It is important to note, however, that these data are heterogeneous and are not necessarily generalizable to the global population, nor were they formally meta-analysed. It is likely that additional studies have since been published sampling in 2023 or later but were not captured in a formal search.

WHO continues to encourage investigators to undertake seroprevalence studies and to publish the results on public platforms. Such studies have been crucial in estimating susceptibility to SARS-CoV-2 in high-priority groups, looking beyond the insights offered by vaccination data alone.

Hybrid immunity provides more robust protection against Omicron infection and severe disease compared to previous SARS-CoV-2 infection without vaccination or vaccination alone. The interim statement on hybrid immunity and increasing population seroprevalence rates, published by WHO in June 2022, defined hybrid immunity as 'the immune protection in individuals who have had one or more doses of a COVID-19 vaccine and experienced at least one SARS-CoV-2 infection before or after the initiation of vaccination'. The protection from hybrid immunity wanes within months, particularly for infection, although it remains high and sustained for preventing hospital admission, severe disease, and death.

Situation summary

Six years since the emergence of SARS-CoV-2, we are still in the "base case" scenario with some elements of the "worst case" (see Table 2). This includes the continued emergence of highly transmissible variants against which existing vaccines are less effective and the waning of immunity against severe disease and death. New variants have not yet, however, been observed to be more virulent. The current situation requires on-going monitoring of virus circulation and evolution as well as review and adaptation of vaccine composition to ensure optimal effectiveness. TAG-VE and TAG-CO-VAC remain active in analysing available data on emerging variants, even if data are increasingly limited.

Table 2. Base case, best case, and worst-case planning scenarios (adapted from SPRP 2022)

Scenario	Description
Base case	The virus continues to evolve. However, severity is significantly reduced over time due to sustained and sufficient immunity against severe disease and death, with a further decoupling between the incidence of cases and severe disease leading to progressively milder outbreaks. Periodic spikes in transmission may occur as a result of an increasing proportion of susceptible individuals over time if waning immunity is significant, which may require periodic boosting at least for high-priority populations; a seasonal pattern of peaks in transmission in temperate zones may emerge.
Best case	Future variants that emerge are significantly less severe, protection against severe disease is maintained without the need for periodic boosting or significant alterations to current vaccines.
Worst case	A more virulent and highly transmissible variant emerges against which vaccines are less effective, and/or immunity against severe disease and death wanes rapidly, especially in the most vulnerable groups. This would require significant alterations to current vaccines and full redeployment and/or broader boosting of all high-priority groups.

Reset case	An entirely new SARS-CoV-2 virus emerges from either a pre-existing or newly established animal reservoir, or through a recombination event in a co-infected patient that produces a virus sharing genetic traits of both parent lineages. This scenario effectively resets population immunity and existing countermeasures, necessitating the development of new vaccines, treatments, and public health strategies.

Context assessment

As countries transition to sustained COVID-19 management, maintaining core public health capacities remains important. Diagnostic testing, genomic sequencing, and environmental surveillance—including wastewater monitoring—continue to support early detection and variant tracking. Integration of SARS-CoV-2 surveillance into systems like e-GISRS has enhanced global monitoring, though implementation varies across regions. Public health and social measures (PHSM), while largely phased out, remain relevant for risk-based response planning. WHO encourages their continued integration into national strategies, supported by available frameworks and tools. Vaccination efforts must focus on high-risk groups, with simplified dosing and integration into routine immunization programme services to ensure sustainability. Risk communication and community engagement (RCCE-IM) play a vital role in maintaining public trust and promoting protective behaviours. Despite reduced activity in many countries, WHO highlights the value of these approaches in preparedness planning. Infection prevention and control (IPC) remains essential in healthcare settings, supported by updated WHO guidance and training resources. Essential health services have largely resumed, though recovery is uneven. Particular attention is needed for older populations and mental health, where service disruptions have had lasting impacts. WHO continues to support MS in strengthening integrated care models and leveraging lessons learned to build more inclusive and resilient health systems.

Capacities	Vulnerabilities
Laboratory and diagnostics The reference tests for SARS-CoV-2 testing are nucleic acid amplification tests (NAAT), such as RT-PCR. Antigen-detecting rapid diagnostic tests (Ag-RDTs) are also widely available and have high sensitivity and very high specificity in symptomatic individuals. Self-testing using Ag-RDTs is also available in most countries. Serological tests (such as ELISA and antibody-detecting rapid diagnostic tests, or Ab-RDT) are not recommended for the diagnosis of COVID-19 but can be used to assess antibody levels in individuals who had a past infection and/or were vaccinated. SARS-CoV-2 continuously evolve, resulting in genetic variation in the population of circulating variants, also called lineages, that can affect certain SARS-CoV-2 diagnostic tests. These mutations can potentially affect both rapid antigen tests and PCR tests. However, PCR tests still retain higher accuracy due to the use of multiple gene targets, including conserved regions of the genome. In the updated policy brief on COVID-19 testing, WHO advises MS to continue to offer testing for COVID-19 in line with three main objectives as part of COVID-19 management and control: (i) reduce morbidity and mortality through linkage to prompt care and treatment, (ii) monitor the evolution of the SARS-CoV-2 and (iii) reduce the risk of emergence and spread of new SARS-CoV-2 variants that could cause upsurges of cases. Early testing of suspected COVID-19 cases, particularly among individuals at higher risk for hospitalization or severe illness, is essential to ensure timely access to supportive care and COVID-19 therapeutics. Testing of clinical and environmental samples continues to play a critical role in monitoring the evolution of SARS-CoV-2 by contributing data from sentinel, wastewater, and animal surveillance systems. COVID-19 testing and reporting strategies should be integrated with genomic surveillance and phenotypic assessment. As countries transition to comprehensive, long-term COVID-19 management within broader disease prevention and control programs, they must remain prepared to rapidly scale up testing in response to surges caused by new SARS-CoV-2 variants that could overwhelm health system capacities. Consolidated guidance for SARS-CoV-2 testing, exploring the value of testing in different sub-population and appropriate testing strategies across	**Reduced SARS-CoV-2 testing in health facilities** Testing for SARS-CoV-2 has significantly reduced especially in resource limited countries since the PHEIC was lifted making it difficult to accurately estimate the burden of the disease globally. **Genomic Surveillance** The ongoing evolution of SARS-CoV-2 necessitates continuous genomic surveillance to assess the impact of emerging variants on diagnostic accuracy, vaccine effectiveness, and therapeutic efficacy. However, as a result of reduced testing, levels of genomic sequencing and genetic sequence data sharing have significantly decreased over time and vary widely across countries and regions posing significant challenges to the assessment of the SARS-CoV-2 variant landscape.

Capacities	Vulnerabilities
different transmission contexts is currently under development and is expected to be completed by mid-2026. **WHO Coronavirus Network (CoViNet)** The CoViNet aims to bring together surveillance programs and reference laboratories to support enhanced epidemiological monitoring and laboratory (phenotypic and genotypic) assessment of SARS-CoV-2, MERS-CoV and novel coronaviruses of public health importance including capacity building of laboratories in low- and middle-income countries. Currently, the network comprises 48 laboratories across 35 countries, with the total expected to expand upon the completion of the evaluation process for the second expression of interest call. To support TAG-CO-VAC deliberations, CoViNet contributed to the generation of antigenic characterization data across its reference laboratories. Nine labs contributed under four main categories: post-vaccination sera (including post-XBB.1.5 and, where possible, post-JN.1/KP.2), community sera, sera from individuals with known infection histories (including JN.1), and animal sera. Variants tested included KP.3, LB.1, KP.3.1.1, and XEC, though specific variants varied by lab. The coordinated findings were presented to TAG-CO-VAC on 10 December 2024. Additionally in 2024, CoViNet advanced SARS-CoV-2 antigenic characterization for timely risk assessment through the WHO BioHub, supported the development of neutralization assay capacity in Ghana and Pakistan, and enhanced sequencing efforts in Uganda, South Sudan, and Senegal. In 2025, the network continues to strengthen coronavirus surveillance by sharing harmonized RT-PCR protocols for pan-CoV detection, guiding countries on optimal sequencing volume and turnaround times, and distributing external quality assessment (EQA) panels for zoonotic coronaviruses to over 30 reference laboratories as well as SARS-CoV-2 EQA panels via GISRS to all National Influenza Centres (NICs).	
Use of the Global Influenza Surveillance and Response System (GISRS) for COVID-19 surveillance GISRS continues to monitor the co-circulation of SARS-CoV-2 and influenza and other respiratory viruses, provide training, technical, and logistical support to resource-limited countries to conduct testing using multiplex RT-PCR assays and genomic sequencing of positive specimens. Since 2021, the WHO Collaborating Centre for the Surveillance, Epidemiology and Control of Influenza at the United States Centers for Disease Control and Prevention (US CDC) has distributed thousands of multiplex RT-PCR kits for influenza A, influenza B, and SARS-CoV-2, to national influenza laboratories in countries through the International Reagents Resource. An External Quality Assessment Programme (EQAP) coordinated by the Global Influenza Programme has incorporated SARS-CoV-2 as a target to be tested by GISRS labs to evaluate their performance in detecting SARS-CoV-2. Since January 2022, WHO has also supported MS in adapting and implementing regional frameworks for the integration of respiratory viruses of epidemic and pandemic potential, including the "Mosaic" framework designed to establish coordinated and effective surveillance approaches to address key priorities related to respiratory pathogens, such as influenza, SARS-CoV-2, MERS-CoV, and RSV. It remains critical for countries to continue to implement integrated sentinel surveillance to monitor the co-circulation and viral evolution of influenza and SARS-CoV-2, assess risks, and prepare for resurgences of either or both viruses. To this end, WHO has published "Implementing the integrated sentinel surveillance of influenza and other respiratory viruses of epidemic and pandemic potential by the Global Influenza Surveillance and Response System: Standards and operational guidance". These standards recommend year-round surveillance for acute respiratory infections be conducted, including testing and characterization for influenza and SARS-CoV-2 and reporting surveillance data to WHO on a weekly basis.	**Integrated surveillance** Integration of SARS-CoV-2 into existing respiratory surveillance systems like GISRS varies across regions. For 2025, as of 30 November 2025, 12.5 million specimens have been tested for SARS-CoV-2 and reported to the global GISRS platform (RespiMart). Reporting rates ranged from 44% in the Western Pacific Region to 89% in the European Region. The integration of severity and impact surveillance, which requires disaggregation of data by case definitions, was more limited.
Environmental surveillance Globally, an increasing number of jurisdictions are including wastewater sampling in their surveillance of SARS- CoV-2. Environmental Surveillance (ES), including wastewater surveillance, can provide early warning signals of emergence, re-emergence, or surges of SARS-CoV-2, including VOCs and VOIs, at least one week	**Environmental surveillance** Although more countries are known to be using environmental surveillance as an additional approach for

Capacities	Vulnerabilities
prior to the detection of clinical cases. By detecting hotspot areas and performing targeted surveillance of circulation of the virus in high-risk settings or vulnerable communities, ES can also provide a cost-effective tool for public health surveillance. As COVID-19 control measures and public interest in diagnostic testing decline, the role of ES becomes even more important to detect population-level trends. However, many ES programmes are also scaling back in large part due to limited funding to support public health authorities, wastewater utilities, and ES laboratories for such activities. The guidance on environmental surveillance for SARS-CoV-2 to complement public health surveillance was updated in September 2023. The updated guidance includes demonstrated public health use cases for ES, the minimum requirements for planning and coordinating environmental surveillance in different resource settings, and best practice for sampling and analysis. Global efforts are evolving rapidly towards multi-pathogen and agnostic ES, building on longstanding experience and capacity for polio ES and more recent application for SARS-CoV-2. Multi-pathogen approaches for communities and sentinel sites (e.g., airports), which are still in feasibility testing phase, anticipate efficiencies in combining ES for two or more targets and greater integration with clinical surveillance for all targets. Agnostic environmental surveillance, particularly through wastewater and air sampling combined with metagenomic sequencing, combines insights across human, animal, and environmental health (One Health) and provides a powerful tool for the early detection and monitoring of SARS-CoV-2 and other emerging or novel respiratory viruses without the need for prior knowledge of the specific pathogen. This approach supports risk assessment by capturing signals from asymptomatic or undiagnosed infections at the population level, enabling timely public health responses. WHO is developing guidance and building capacity for wastewater environmental surveillance (WES) on one or more pathogens as part of a collaborative surveillance approach. The focus is on supporting countries to prioritize WES activities where it can generate actionable public health insights, is technically and operationally feasible, ethically and legally acceptable, and can be effectively integrated with other surveillance systems. The pilot version of WES for SARS-CoV-2 summary document is open for feedback throughout 2025 and should be used together with the accompanying pathogen agnostic WES Guidance.	monitoring SARS-CoV-2, the number of countries making this information available to inform the public is limited. While there is an absence of consensus on defining the core indicators and data standards, monitoring wastewater surveillance trends is an important factor to increase visibility on both virus circulation, variant distribution and potential surges in health care system. Currently, there are around 30 countries listed with publicly available information products in the WHO Global COVID-19 dashboard. However, most of these are HIC with already maintained core surveillance activities. Adopting environmental surveillance in more countries with limited public health surveillance would fill an important gap.
Public health and social measures (PHSM) Most, if not all, countries have phased out public health and social measures (PHSM) for COVID-19 due to changes in disease burden and epidemiological trends, as well as socioeconomic requirements to reopen communities. Monitoring of COVID-19 PHSM policies by WHO and other external groups stopped when most countries had lifted PHSM measures. WHO continues to recommend that countries integrate PHSM and the deployment of medical countermeasures as part of a robust strategy for long-term, sustainable COVID-19 management in the context of overall disease control and prevention programmes. PHSM should be applied in a layered and proportionate manner, based on identified public health risks and evidence of their effectiveness. Mitigation measures, such as social protection policies and community-based interventions should be integrated into PHSM implementation to reduce the impact of unintended negative consequences of PHSM implementation, including unemployment, food insecurity, interrupted education, domestic violence, and slowed economic productivity. PHSM policies should be monitored routinely at the national, subnational and local levels to facilitate transparency and enable evaluation of PHSM effectiveness. Based on routine PHSM policy and disease situation monitoring, PHSM should be adapted to ensure that they remain relevant, proportional, and effective in the face of evolving contextual factors. Decisions to adjust PHSM may be based on set schedules or thresholds in response to shifts in epidemiological trends, healthcare system capacity, availability and distribution of medical countermeasures, and population immunity, among others. WHO has published a number of resources to support MS in developing risk-based, evidence-informed PHSM measures for COVID-19 in an equitable and context-specific manner. In particular, WHO has recently published the PHSM Decision	**Public health and social measures (PHSM)** Few countries have adequate plans and strategies to re-introduce, scale-up and adjust PHSM in the event of a resurgence of COVID-19 or another respiratory pathogen. This is a critical concern as insufficient PHSM planning and preparedness can result not only in increased cases of and deaths from COVID-19, leading to increased burden on health systems, but also requires the implementation of more stringent PHSM down the line. This can increase the number of unintended negative consequences coming from PHSM. Being able to rapidly re-introduce and scale PHSM as needed is an essential capacity required for the long-term control of COVID-19 and other infectious diseases.

Capacities	Vulnerabilities
Navigator, a first-of-its-kind framework designed to support governments in navigating complex decisions on PHSM during health emergencies. The Navigator is threat-agnostic and provides a step-by-step, risk-based and evidence-informed approach to support governments to design, balance, prioritize and adapt PHSM within the context of overall response strategies. WHO has also prepared the PHSM Conceptual Framework to harmonize the understanding and language used to describe how PHSM work during health emergencies. Further, the PHSM Knowledge Hub serves a publicly accessible gateway to research and resources on PHSM. It has four interconnected tools: 1) the ***PHSM Bibliographic Library,*** a repository of multilingual and multidisciplinary research articles on PHSM, providing access to almost 500,000 research articles for 23 priority diseases; 2) **Living Reviews** which enables users to automate and accelerate the review process with **AI-assisted screening and streamlined selection and reporting** to provide tamely insights from research; 3) **Research Atlas** mapping research to the WHO global research agenda and Conceptual Framework; and 4) the **WHO Recommendation Finder**, a comprehensive and searchable repository of PHSM-related WHO recommendations, technical specifications and enabling functions. Additional resources are available via the WHO Public Health and Social Measures Initiative. Considerable research was conducted on PHSM during the COVID-19 pandemic, yielding important insights for the development and deployment of PHSM in health emergencies. In 2024, under the WHO PHSM Initiative, an umbrella review of the effectiveness and unintended consequences of PHSM in the context of the COVID-19 pandemic was published. (38) This review is considered the most comprehensive and current landscape analysis of the existing research available, including experimental and observational studies. The review further highlighted that the current research base is of predominantly low- to very-low certainty, emphasizing the critical importance of strengthening and harmonizing the research methodologies to measure PHSM effectiveness and consequences. It also underscored the need to increase coordination and alignment of research efforts with the priorities of policymakers and stakeholders. Readiness and response for future health emergencies requires expanding research efforts for PHSM beyond COVID-19 and adopting an all-hazard approach. Furthermore, WHO published a comprehensive scoping review on the role and effectiveness of the social protection policies aimed at mitigating the socioeconomic impact of PHSM implementation during the COVID-19 pandemic. Additionally, a systematic review and meta-analysis are underway to examine the determinants of adherence to PHSM, including knowledge, self-efficacy and risk perception and trust in government. <u>International travel</u> Following the transition from the PHEIC response to integration within broader disease prevention and control programmes. WHO recommends that national authorities adhere to the Standing Recommendations on COVID-19 issued by the WHO Director General, as well as WHO's policy and technical considerations for implementing a risk-based approach to international travel in the context of COVID-19. In line with these recommendations and considering the current COVID-19 epidemiological situation, countries should refrain from any unilateral travel-related restrictions and health measures, including requirements for testing or vaccination, and lift any such remaining measures to avoid unnecessary interference with international traffic and trade. Countries are recommended to initiate, support and collaborate on research to generate evidence that informs optimal use of travel-related measures as well as the impact of misinformation and disinformation on compliance with such measures; countries should also develop and maintain capacities for applying a risk-based and evidence-informed approach for decision making on travel-related strategies and measures to reduce SARS-CoV-2 transmission, in close collaboration with all relevant stakeholders . Countries may further refer to WHO's evidence review on syndromic entry and exit screening for epidemic prone diseases at ground crossings , which summarizes the latest evidence on health measures conducted at ground crossings during recent decades for epidemic-prone diseases, including for SARS-CoV-2. <u>Mass gatherings</u> Countries are encouraged to apply a generic All-hazards Risk Assessment Tool for Mass Gathering Events developed by WHO to identify priority hazards related to the event, assess and quantify overall level of risks, identify and account for	

Capacities	Vulnerabilities
precautionary measures to reduce risks. This includes planning for SARS-CoV-2, which should continue to follow a risk-based approach built on three key components: risk evaluation, risk mitigation, and risk communication. This approach should be tailored to the size and type of event, and its context (including local and global SARS-CoV-2 transmission intensity and local health system capacity), with both the process and outcomes aptly communicated. A web application of the tool is also available for application. Planning considerations should extend beyond the event itself to include the broader social context in which the event takes place (e.g., informal side gatherings). Organizers should apply a holistic approach, paying close attention to venues, transportation, accommodations, and individual behaviours that might lead to unplanned congregation in public spaces, and relevant PHSM proportional to the risk. WHO has also published Mass Gathering practical guide for simulation exercises and after action reviews, which provides practical tools and structured methodologies for conducting SimEx and AAR to strengthen MG preparedness and legacy building, including for COVID-19. Although the COVID-19 situation has transited from the PHEIC response to its management within a country's broader disease prevention and control programme, individuals should still make informed decisions when planning or attending public gatherings. The WHO Q&A on small public gatherings considering COVID-19 remains applicable and can be consulted to ensure people planning to meet and attend important events and gatherings can do so safely.	
Vaccination Vaccination policy WHO COVID-19 vaccine policy recommendations, as published in the "Roadmap for prioritizing uses of COVID-19 vaccines" in November 2023, were re-endorsed by the WHO's Strategic Advisory Group of Experts on Immunization (SAGE) based on the latest available programme, effectiveness, and impact data in September 2025, though SAGE advised that the recommendations be reviewed and updated based on the current context and other health priorities in countries. According to the roadmap, WHO recommends a simplified single-dose regimen for most COVID-19 vaccines for individuals in high and medium priority-use groups who have not yet received a COVID-19 vaccine. This simplified dosing regimen aims to improve acceptance and uptake, while providing adequate protection at a time when most people have either had at least one SARS-CoV-2 infection or prior vaccination. High priority-use groups include older adults and other adults living with severe obesity or comorbidities that increase their risk of severe COVID-19. Medium priority-use groups include healthy adults and children and adolescents living with severe obesity or comorbidities that increase their risk of severe COVID-19. The roadmap outlines several sub-populations with special considerations, notably persons with immunocompromising conditions, pregnant adults and adolescents, and health and care workers with direct patient contact, with distinct vaccination recommendations. Depending on the sub-population, vaccination with 1-3 doses is recommended, based on their risk of severe COVID-19. Vaccination in low priority-use groups, including healthy children and adolescents, can be considered based on country priorities and available resources. The updated roadmap further recommends the periodic re-vaccination of most high priority-use groups and sub-populations with special considerations at an interval of 6-12 months, depending on the group. Pregnant women are recommended to be re-vaccinated during each pregnancy. However, SAGE recommended in September 2025 an updated review of the evidence on the effectiveness of COVID-19 vaccines during the Omicron period, with a focus on the effect of vaccination in pregnancy on birth outcomes and infant COVID-19 to reassess the validity of recommendation on vaccination during pregnancy, in the current epidemiological context. Re-vaccination is not routinely recommended for medium and low priority-use groups. Globally, 143 WHO MS provided information on their 2024 national COVID-19 vaccination policies at least one population group. Among those 143 MS, 130 reported recommending COVID-19 vaccination for at least once population group, and 118 reported recommending periodic revaccinations in at least one group. Across target groups, MS mostly frequently reported recommendations for	**Vaccination** While effective COVID-19 vaccines remain available, there has been a significant decrease in in vaccine demand, and uptake. Global uptake of doses among high-risk populations has plateaued since early 2023, with particularly low coverage observed in 2024. Uptake varies significantly across regions and income levels, with the lowest levels reported in low- and middle-income countries. Insufficient national prioritization due to competing priorities, funding constraints, and waning risk perception among populations contribute to these trends. The emergence of new variants with immune escape potential raises concerns about the adequacy of protection among unvaccinated or under vaccinated groups. These could lead to increased morbidity and mortality should more virulent variants emerge. Sustained commitment to periodic re-vaccination and enhanced risk communication are critical to addressing these vulnerabilities.

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periodic re-vaccination of older adults (108 WHO MS) followed by adults with chronic conditions (102 WHO MS). In 2024, 90 MS recommended COVID-19 re-vaccination for health workers and 81 MS recommended COVID-19 re-vaccination for pregnant persons. The majority of MS did not recommend COVID-19 re-vaccination for children and adolescents or healthy adults(36 MS recommended re-vaccination for children and adolescents; 58 MS recommended re-vaccination for adults). Vaccine antigen composition Given the continuous and substantial evolution of SARS-CoV-2 since the beginning of the COVID-19 pandemic, the WHO Technical Advisory Group on COVID-19 Vaccine Composition (TAG-CO-VAC) continues to closely monitor the genetic and antigenic evolution of SARS-CoV-2 variants, immune responses to SARS-CoV-2 infection and COVID-19 vaccination, and the performance of COVID-19 vaccines against circulating variants. Based on these evaluations, WHO advises vaccine manufacturers and regulatory authorities on the implications for further updates to COVID-19 vaccine antigen composition. In May 2025, the TAG-CO-VAC advised that monovalent JN.1 or KP.2 remain appropriate vaccine antigens and that monovalent LP.8.1 is a suitable alternative vaccine antigen. Several vaccine manufacturers (using mRNA and recombinant protein-based platforms) have developed vaccines using monovalent JN.1, KP.2 or LP.8.1 antigen composition and some of these have been approved for use by regulatory authorities. In December 2025, the TAG-CO-VAC reconvened and advised that monovalent LP.8.1 is the recommended vaccine antigen. The previously recommended JN.1 lineage (JN.1 or KP.2) antigens remain suitable alternatives and vaccination should not be delayed in anticipation of access to vaccines with the LP.8.1 composition. The TAG-CO-VAC will continue to convene decision-making meetings on vaccine antigen composition twice a year. These meetings are timed to balance the availability of the latest epidemiological, immunological and virological data, with the kinetics of vaccine-induced protection and the lead time manufacturers need to update the antigen composition of authorized COVID-19 vaccines. As all COVID-19 vaccines with WHO prequalification (PQ) / Emergency Use Listing (EUL) recommendation continue to provide protection against severe disease and death, any COVID-19 vaccine with WHO PQ / EUL listing can still be used either for primary vaccination or for periodic revaccination. In accordance with WHO SAGE policy, vaccination should not be delayed in anticipation of access to Omicron variant-containing vaccines as there is a greater benefit in ensuring that persons at high risk of developing severe COVID-19 receive a dose of any available vaccine as compared to delayed vaccination. Vaccine effectiveness (VE) COVID-19 vaccines with an updated antigen composition show moderate relative vaccine effectiveness in preventing COVID-19 cases and hospitalizations, though protection wanes by six months. Among high-priority populations, monovalent XBB.1.5 and monovalent JN.1 or KP.2 vaccines provide additional, moderate protection against severe disease and death associated with JN.1 subvariants. There is little waning in first four months after vaccination against JN.1 outcomes, although longer follow-up time is needed. Few studies among moderate/low priority populations, which show similar VE to high priority populations. Initial data indicate that LP.8.1 as a vaccine antigen offers similar or modestly increased cross-reactive neutralising antibody responses to circulating JN.1-derived SARS-CoV-2 variants, as compared to monovalent JN.1 or KP.2 vaccines. This may translate into an improvement in vaccine effectiveness and duration of protection, however current VE studies do not include outcomes associated with the most recent JN.1 subvariants (e.g., LP 8.1, XFG) and no VE studies have yet evaluated effectiveness using monovalent LP.8.1 vaccines. Vaccine product regulation During the PHEIC, WHO assessed and recommended 13 vaccines through the EUL procedure and one vaccine was directly prequalified post-PHEIC. With the ending of the PHEIC in 2023, WHO informed vaccine manufacturers that they would need	

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to confirm their interest to transition to PQ through submission of a PQ dossier. Vaccines that were no longer manufactured were delisted once all potentially available lots had expired. To date, of these 13 vaccines, four have transitioned to prequalification and one vaccine is transitioning from EUL to PQ. All of the vaccines with or transitioning to PQ feature XBB.1.5, JN.1 and/or LP.8.1 formulations. Monovalent JN.1, KP.2 and/or LP.8.1 vaccines have been approved and authorized for use in Canada, the European Union, Japan, Switzerland, the United Kingdom, and the United States of America. In May 2025, the European Medicines Agency issued a preferential recommendation for LP.8.1 vaccine composition to ensure cross-reactivity against current dominant and emerging SARS-CoV-2 variants.(39) Monovalent JN.1 or KP.2 vaccines can still be considered for the vaccination in 2025-2026 until updated LP.8.1 vaccines become available.(40,41) These recommendations align with the latest recommendation of the WHO TAG-CO-VAC. Vaccine supply A 40% decline in demand between 2023 and 2024 along with a large number of COVID-19 vaccine producers (24 that reported sales in at least one country in 2024) points to a grossly over-supplied market. The concentration of the market is less substantial than in 2023, with the volume share of the largest two producers being ~40% of the total. The product preferences were also more fragmented when compared to 2023, with mRNA vaccines accounting for ~40% of global volumes. The drop in demand is mainly attributed to HICs, while LICs and LMICs demand remained relatively stable. The decline in the number of manufacturers (24 down from 49 in 2023) suggests market exits in view of declining demand, while several of the remaining manufacturers continue to produce updated products based on vaccine composition recommendations. Low- and lower-middle income countries, securing doses through the Gavi COVID-19 program in 2024, demonstrated the same declining trends in demand as those observed at the global level. Three products were offered to the 54 countries eligible for support from Gavi, the Vaccine Alliance and to the 37 non-Gavi countries eligible of the COVAX Advanced Market Commitment mechanism who have access to Gavi-supported vaccines procured through the United Nations Children's Fund (UNICEF) Supply Division or the PAHO Revolving Fund. A large majority of the vaccine products allocated were of an XBB-adapted vaccine. Gavi will discontinue its support for COVID-19 vaccination following the completion of the current 2024-2025 programme on 31 December 2025. This decision was taken by the Gavi Board following the outcomes of the Alliance's Vaccine Investment Strategy (VIS) process, which considered the general decline in country demand and the decreasing cost effectiveness of COVID-19 vaccination in certain contexts. Gavi will consider support to countries for COVID-19 vaccination in the event of COVID-19 outbreaks through its pandemic preparedness, prevention and response activities. Vaccine confidence and demand Demand for COVID-19 vaccination remains low, including in high priority-use groups and sub-populations with special considerations. WHO recommends that countries use evidence-based and behaviourally informed strategies to increase confidence in and demand for COVID-19 vaccination, particularly in the aforementioned groups. This includes the gathering and use of local data on behavioural and social drivers of vaccination to assess root causes of low uptake and to design and evaluate tailored interventions. Interventions to increase trust and uptake can include: (i) targeted information campaigns via trusted information sources, (ii) partnering with local and community actors to increase community engagement, and (iii) trainings with health and care workers to increase their confidence in recommending COVID-19 vaccination and responding to any questions or concerns, and (iv) improvements to delivery strategies to increase the ease of access to vaccination, among others. Interventions should be co-designed and well-tailored to meet the needs of the identified priority populations for vaccination, accounting for specific barriers or drivers. Vaccine programme sustainability and integration Given the latest policy recommendations and current COVID-19 vaccine programme goals, WHO recommends that countries integrate COVID-19 vaccination into primary health care and other routine health services, moving away from mass campaign vaccination. This recommendation is informed by	

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evolved vaccination goals, as the focus moved towards reaching those groups at higher risk of severe disease and away from reaching the general population. From a sustainability perspective, vaccination through routine health services requires less human and financial resources than the mass vaccination approaches that were common early in the rollout during the acute phase of the pandemic. Routinization of COVID-19 vaccination represents an opportunity for health systems to sustain the gains to vaccination programs and systems made under COVID-19 pandemic while also bolstering pandemic preparedness, prevention and response capacity against future threats. It promotes the life course approach to immunization in alignment with Immunization Agenda 2030 goals and the development of vaccine delivery platforms for risk groups, notably for older adults, health and care workers, and pregnant women. Such delivery platforms can be used in support of optimizing existing vaccination efforts (for example, against seasonal influenza and other vaccines targeting these adult groups), the introduction of new adult-targeted vaccines, and the 'catch-up' of missed doses for other vaccines or other health interventions targeting the same groups. Co-administration of COVID-19 vaccines with other vaccines, notably those for seasonal influenza, may increase vaccine uptake by improving convenience of vaccination and reducing the number of vaccination contacts needed by one person. Further, co-administering vaccines and with other health interventions may offer efficiencies in the programmatic delivery of both vaccines, reducing both administrative and programmatic costs and improve the quality of health care. WHO encourages countries to explore opportunities to co-administer COVID-19 and seasonal influenza vaccines to increase uptake of both vaccines. WHO recommends that countries assess new capacities developed and investments made under COVID-19 and determine those that can be sustained and carried forward in service of broader disease control programmes and health system strength. To date, several countries have leveraged COVID-19 investments for new or expanded immunization information systems, cold chain equipment or health and care worker training programs, among other domains.(42) A COVID-19 vaccine delivery toolkit is available with guidance, resources and tools to support countries in implementing COVID-19 vaccination.	
Risk communication, community engagement and infodemic management (RCCE-IM) RCCE-IM programmes played a key role in the COVID-19 response by helping communities understand the virus, adopt protective behaviours and build trust in recommended health measures. However, most countries have now phased out planned and comprehensive RCCE-IM COVID-19 interventions due to changes in disease burden, epidemiological trends, and resource availability. This includes the discontinuation of rapid research and polling to assess population-level knowledge, attitudes, perceptions and behaviours associated with COVID-19- making it more difficult to measure these variables and associated risks meaningfully. As coordinated interventions have slowed or stopped, there is some evidence that this has contributed to a decline in adherence to protective behaviours such as mask wearing, regular hand washing, testing in case of exposure or symptoms, and staying up to date with COVID-19 vaccines. Similar declines are seen in measures such as staying at home when unwell, and sustaining these protective behaviours requires not only individual effort but also clear guidance from authorities and workplace. Limited social-behavioural data still being collected show that risk perception and demand for COVID-19 related information are now relatively low. For example, findings from a survey conducted in the WHO European Region in August 2024 indicate that most respondents were not concerned about COVID-19. However, the same survey found that 65% felt they had enough information and that 83% knew where to get tested if they became ill. Given ongoing COVID-19 circulation, thousands of people continue to be infected, re-infected and experiencing post COVID-19 condition, WHO recommends that tailored and participatory RCCE-IM approaches remain vital for communicating evolving risks and co-developing appropriate, actionable solutions, especially with high-risk groups. Listening to and engaging with communities remains critical for understanding needs, addressing emerging concerns and ensuring interventions remain relevant across different contexts. RCCE-IM efforts are essential for	**RCCE-IM** While there is strong evidence demonstrating the value of tailored RCCE-IM approaches in delivering more equitable and effective responses, few countries have continued to invest, maintain or integrate these capacities into respiratory illnesses responses, broader health emergency and pandemic preparedness strategies. Despite their proven impact, RCCE-IM resources remain underdeveloped and underutilized in long term planning and response systems. This is also demonstrated by SPAR scoring where RCCE is one of the lowest capacities across many countries.

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sustaining protective behaviours, monitoring and addressing mis- and disinformation around the virus, its long-term effects and the protective measures, like vaccination, building trust in public health measures and promoting cooperation and inclusion. WHO continues to recommend several priority actions for countries, including integrating RCCE-IM resources and capacities into national pandemic preparedness plans and governance structures. These actions include establishing community listening and two-way communication systems (e.g. hotlines and community feedback loops), monitoring people's questions as well as mis- and disinformation trends on appropriate platforms and addressing them by promoting targeted guidance through trusted sources, and co-developing solutions with high-risk and community trusted groups. Building, maintaining and monitoring trust remains essential objectives of RCCE-IM strategies. The updated WHO COVID-19 policy brief on RCCE-IM provides an overview of the recommended actions for MS. A substantial body of knowledge on RCCE-IM was generated during the COVID-19 pandemic and these insights should be leveraged to strengthen RCCE-IM capacities and systems in all countries. Key lessons include the critical role of trust in local health authorities and community organizations, the need for accurate and timely information during uncertainty, and the value of placing communities at the centre of response efforts. Continued investment in these areas can lead to more effective, inclusive and sustainable health emergency programmes.	
Infection Prevention and Control (IPC) and Water, Sanitation and Hygiene (WASH) Health-care facilities remain a high-risk setting for SARS-CoV-2 transmission. WHO's Infection prevention and control in the context of COVID-19 guideline consolidates technical guidance developed and published during the COVID-19 pandemic into evidence-based recommendations for IPC. Published in December 2023, the document takes into consideration the transition from critical emergency-response activities to longer-term, sustained COVID-19 disease prevention, control, and management, including an emphasis on integrating IPC activities into routine systems and practices. The guideline emphasises the importance of operational IPC programmes at facility level and describes core elements of IPC principles and practices for implementation in health-care facilities, including engineering and administrative controls, environmental cleaning, and personal protective equipment, and respective elements for the adoption of IPC measures of PHSM in community settings. An article summarizing the recommendations from the guideline is also available.(43) WHO recommends that countries ensure IPC measures are implemented for suspected and confirmed COVID-19 cases in clinical settings and that health and care workers receive adequate training on and access to PPE. Countries are encouraged to continue delivering optimal clinical care for patients with COVID-19, including maintaining measures to protect patients and health workers from health care-associated infections. National and sub-national level authorities should maintain readiness to respond to the possibility of future surges of COVID-19 that could overwhelm health systems. WHO recommends MS focus on the following three key objectives for COVID-19 management and control: elevate the importance of IPC programmes; maintain outbreak readiness and response capacities; and establish and maintain appropriate infrastructure needed for safe health service delivery and a resilient health workforce. Updated training courses aligned with the latest recommendations are available via OpenWHO. The trainings include an overview of the recommendations and best practice statements contained in WHO's IPC in the context of COVID-19 guideline, as well as advice for practical implementation of IPC measures in healthcare and community settings.	
Essential health services, including mental health While COVID-19 put tremendous pressure on health systems globally during the peak of the crisis, the burden is now substantially lower even if it still puts pressure on health systems around the world. As a result, essential health services are returning to normal, pre-pandemic levels of operation in most countries. Routine	

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childhood immunization coverage, for example, have returned to pre-pandemic levels in many cases, as evidenced by the latest estimates of immunization coverage. Recovery has been heterogeneous, however, with some countries faring more poorly than others. The COVID-19 pandemic exposed multiple, substantial barriers faced by certain populations, however, notably older persons. It is thus important while returning to normality to apply the lessons learned. This implies reorienting the systems to provide more inclusive and meaningful solutions to older persons, representing a growing and highly vulnerable population.(44) In this context, the need to bridge health and social care services to deliver a continuum of integrated care to older persons has been repeatedly advocated. Furthermore, the consequences of the disruption of care suffered by older persons during the pandemic should not be overlooked as potentially burdening the current situation. In fact, the COVID-19 pandemic could have substantially reshaped the clinical profile of the population (e.g., changing the prevalence of non-communicable diseases [NCDs]) through a direct action of the infection (e.g., due to premature death, by influencing NCDs' onset or progression, PCC) or indirectly, for example through the necessary public health strategies applied for infection control (e.g., prolonged physical inactivity, social isolation, poor adherence to care interventions, unhealthy diets) or changes in the social determinants of health. (45) The focus of programming to protect essential health services has shifted to preparing health systems to shoulder possible future waves of COVID-19 and other health emergencies. It is noteworthy how integrated care services might enhance the readiness of systems to react in case of new events. It is important to consider new standards of care for older persons across settings, especially those hosting the most vulnerable individuals.(46) A broader use of technologies might ensure the continuum of integrated care for older people, avoiding disruptions, supporting monitoring processes, and promoting more timely preventive strategies at different levels. Systematic reviews and lessons learned were documented for maintaining essential maternal, newborn, child and adolescent health services in the face of pandemics and other disruptions to services. It will be important to include these in preparedness plans for future health emergencies responses. A webpage was finalized in 2024 with all relevant reviews, and documentation form countries. A review published in 2024 shows that only 13% of 110 plans reviewed included a planned activity for monitoring or mitigating the impact on maternal, newborn, and child health (MNCH) and less than 5% included relevant indicators, costing or integration of services in the incident management system.(47) The learnings gathered from maintaining MNCH services will be applicable to services as they also prepare to reduce the risk of climate change hazards and related events. A scoping review (48) on interventions to maintain essential MNCH services was updated and published in 2024 and identified an important and growing body of evidence of evaluated interventions to maintain essential services for MNCH during COVID-19 in LMICs. To improve preparedness and responsiveness for future disruptions, managers for decision-makers in LMICs could benefit from global efforts to maintain up-to-date inventories describing implemented interventions and evaluations to facilitate evidence-based implementation of strategies, as well as tools for conducting optimal quality operational and implementation research during disruptions (e.g. rapid ethical approvals, access to routine data). On mental health, WHO recommends that MS strengthen capacities to address the mental health and psychosocial impacts of COVID-19 and other public health emergencies. WHO is supporting MS by implementing World Health Assembly Resolution 77.3 on "Strengthening mental health and psychosocial support before, during and after armed conflicts, natural and human-caused disasters and health and other emergencies". WHO continues to support global, and country-level multisectoral field-based simulation exercises focused on mental health and psychosocial support capacity strengthening. Further, WHO is implementing the Special Initiative for Mental Health, which was launched in 2019 and scaled up during the pandemic. This program now provides over 52 million people in nine countries—Argentina, Bangladesh, Ghana, Jordan, Nepal, the Philippines, Paraguay, Ukraine, and Zimbabwe —with new or improved mental health services integrated into primary and secondary care.	

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Vulnerable populations in humanitarian emergencies The fragility and vulnerability of populations in humanitarian settings have been slightly decreased, with an estimated 314 million people in need of humanitarian assistance in 2024 compared to 368 million in 2023.(49) Conflict, violations of international humanitarian law and international human rights law will continue to be the most significant drivers of humanitarian need in the near future, causing waves of displacement and impacting livelihoods. Forced displacement persists due to violent conflicts and war, large-scale global food crises, and climate change, which drive people into poverty and heighten vulnerability and humanitarian needs. Countries facing conflict or humanitarian emergencies often have weak or fragmented health systems. These circumstances, which precede the pandemic, severely limit affected countries' abilities to test, isolate, and treat COVID-19 patients. Furthermore, basic requirements for implementing PHSM in humanitarian settings are limited, and their strict enforcement in some settings has led to severe disruption of essential healthcare services and loss of livelihoods. Periods of acute emergency and heightened conflict allow for increased transmission as people are displaced and overcrowding occurs. Affected populations may also lack the financial resources to access care, causing circulation to go undetected due to low testing and reporting rates. People affected by humanitarian emergencies are also at higher risk of severe COVID-19 outcomes due to challenges in obtaining and administering therapeutics early, managing co-morbidities, and receiving healthcare for complications.	
Operations support and logistics (OSL) Global markets for the tools needed to respond to COVID-19 have stabilized, and countries have returned to routine access channels for needed supplies. In light of this, WHO closed its COVID-19 Supply Portal in December 2022, harmonizing COVID-19 supply efforts with those of other ongoing emergencies. The rapid spread of COVID-19 in 2020 brought WHO OSL to the forefront of the global emergency response to the pandemic. The COVID-19 Supply Chain System set up and coordinated by WHO OSL in 2020 enabled WHO and partners to procure close to US$ 2 billion of PPE, diagnostics and biomedical equipment to support 194 MS.	
Partner coordination, funding, and external relations In January 2024, WHO launched its global Health Emergency Appeal, seeking US$ 1.5 billion to respond to health emergencies, including US$ 138.1 million for ongoing COVID-19 operations. New funding for COVID-19 remained limited: as of December 2024, only US$ 18.4 million in new contributions had been received, supplemented by US$ 180.1 million in carry-forward funding from 2023. While this helped sustain operations, the funding was largely earmarked and insufficient to fully meet 2024 requirements. The overall financing environment in 2024 continued to tighten, marked by constrained fiscal space, declining official development assistance (ODA), and shifting donor priorities. Unlike during the acute phase of the pandemic, COVID-19 no longer features prominently in earmarked donor budgets. Many partners have reallocated resources to other global crises or emerging health and development priorities. These trends have persisted—and in some cases intensified—in 2025, further challenging the availability of dedicated resources for protracted and underfunded emergencies. In 2025, WHO again appealed for US$ 1.5 billion to support emergency operations. While US$ 15.8 million was the estimated funding requirement for the COVID-19-related response, several aspects of this work have since been integrated into WHE's core functions and are no longer reflected as part of scalable emergency operations. As a result, the appeal figure does not capture the full extent of ongoing organizational needs related to COVID-19. As of December2025, US$ 10.3 million has been received for COVID-19, though this is tightly earmarked for specific countries—and in some cases includes support for vaccine-preventable and other infectious diseases. During 2025 WHO's resource mobilization efforts have increasingly focused on sustainable financing. Through the Investment Round and the increase in assessed contributions, the organization has expanded its donor base, increased the share of flexible and multi-year contributions, and secured stronger long-term commitments.	**Partner coordination, funding, and external relations** Despite the gains, the overall financial outlook for 2026 remains severely constrained, as shrinking official development assistance (ODA) budgets and cuts in major donor health funding further reduce financing for protracted emergencies such as COVID-19

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All WHO publications are cited in the text as hyperlinks. Additional selected references are below. Please note that this is not a comprehensive listing of all relevant COVID-19 reference materials.

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Acronyms and abbreviations

Term	Description
AFR	African region
Ag-RDT	Antigen-detecting rapid diagnostic test
AMR	Region of the Americas
ARIA	Indoor Airborne Risk Assessment in the context of SARS-CoV-2
CERN	European Organization for Nuclear Research
COVAX	COVID-19 Vaccines Global Access
CoViNet	WHO Coronavirus Network
ES	Environmental surveillance
EUL	Emergency Use Listing
EMR	Eastern mediterranean region
EUL	Emergency Use Listing Procedure
EUR	European region
FAO	Food and Agriculture Organization of the United Nations
FDA	United States Food and Drug Administration
GISRS	Global Influenza and Surveillance system
HEPR	Health Emergency Preparedness, Response, and Resilience Framework
HIC	High-income country
ICU	Intensive care unit
IDSR	Integrated Disease Surveillance and Response
IPC	Infection prevention and control
IRP	Infectious respiratory particles
LIC	Low-income country
LMIC	Lower middle-income country
MERS-CoV	Middle East respiratory syndrome coronavirus
MIS-C	Multisystem inflammatory syndrome in children and adolescents from COVID-19
MNCH	Maternal, newborn, and child health
MPXV	Monkeypox virus
MS	Member States
NCD	Non-communicable diseases
ODA	Official development assistance
OSL	Operations support and logistics
PCC	Post COVID-19 condition
PHEIC	Public Health Emergency of International Concern
PHSM	Public health and social measures
PQ	Prequalification
PRET	Preparedness and Resilience for Emerging Threats
RCCE-IM	Risk communication, community engagement, and infodemic management
RNA	Ribonucleic acid
RSV	Respiratory syncytial virus
RT-PCR	Realtime polymerase chain reaction
SAGE	Strategic Advisory Group of Experts on Immunization
SAGO	Strategic Advisory Group for the Origins of Novel Pathogens
SARS-CoV-2	Severe acute respiratory syndrome coronavirus 2
SARI	Severe acute respiratory illness
SEAR	South-East Asia Region
SPRP	Strategic Preparedness and Response Plan
TAG-CO-VAC	Technical Advisory Group on COVID-19 Vaccine Composition
TAG-VE	Technical Advisory Group on Virus Evolution
UMIC	Upper middle income country
UNICEF	United Nations Children's Fund
US CDC	United States Centers for Disease Control and Prevention
VE	Vaccine effectiveness

VIS	Vaccine Investment Strategy
VOC	Variant of concern
VOI	Variant of interest
VUM	Variant under monitoring
WAHIS	World Animal Health Information System
WASH	Water, sanitation, and hygiene
WOAH	World Organization for Animal Health
WHO	World Health Organization
WPR	Western Pacific region