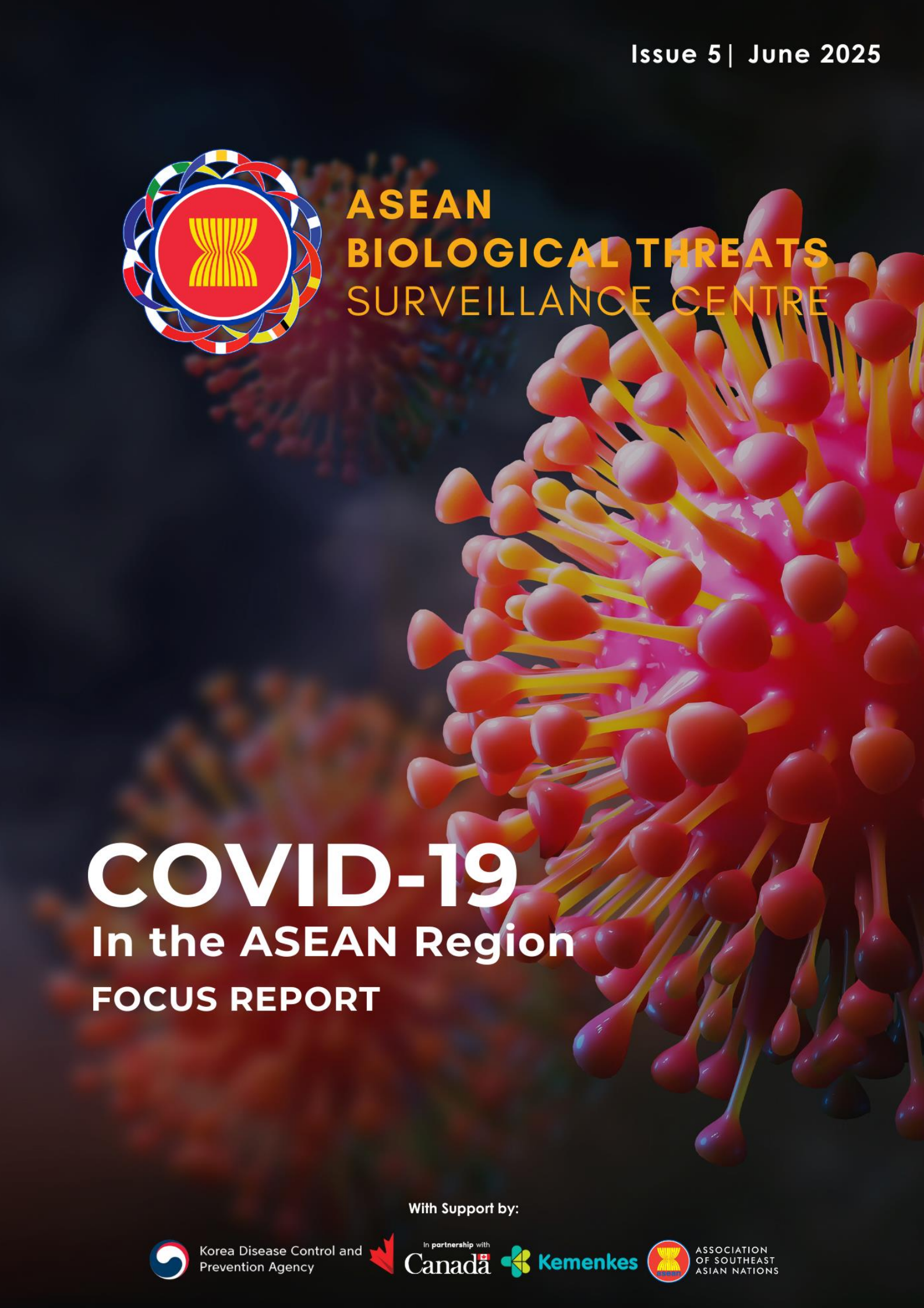
Issue 5 | June 2025

ASEAN BIOLOGICAL THREATS SURVEILLANCE CENTRE



COVID-19
In the ASEAN Region
FOCUS REPORT

With Support by:

Korea Disease Control and Prevention Agency

In partnership with Canada

Kemenkes

ASSOCIATION OF SOUTHEAST ASIAN NATIONS

ASEAN
BIOLOGICAL THREATS
SURVEILLANCE CENTRE

Editorial

PUBLISHER
ASEAN BIOLOGICAL THREATS SURVEILLANCE CENTRE

EDITORIAL ADDRESS
ASEAN BIOLOGICAL THREATS SURVEILLANCE CENTRE
Health Policy and Development Agency
Ministry of Health of Indonesia,
Building 6- Global Health Policy, 2nd floor
Jalan Percetakan Negara No. 29 Johar Baru, Jakarta Pusat, Indonesia 10560
E-mail: support@biodiaspora.org

Table of Contents

COVID-19 FOCUS REPORT

ASEAN
BIOLOGICAL THREATS
SURVEILLANCE CENTRE

Acronyms and Abbreviations

AHC = ASEAN Health Cluster
ARARC = ASEAN Risk Assessment and Risk Communication Centre
ABVC = ASEAN Biological Threats Surveillance Centre
Ag-RDT = Antigen Rapid Diagnostic Test
AHMM = ASEAN Health Ministers Meeting
AMS = ASEAN Member States
ARDS = Acute Respiratory Distress Syndrome
ART = Antigen Rapid Test
APSED = Asia Pacific Strategy for Emerging Diseases
ASEAN = Association of Southeast Asian Nations
ASEAN APT SOMHD = ASEAN Plus Three Senior Official's Meeting on Health Development
ASEAN EOC Network = ASEAN Emergency Operations Centre Network
ASEAN SOMHD = ASEAN Senior Officials' Meeting on Health Development
CEA = Center for Epidemiology and Analysis
COPD = Chronic Obstructive Pulmonary Disease
DCDC = Department of Communicable Disease Control
DHIS2 = District Health Information System 2
DNA = Deoxyribonucleic Acid
EAO = Ethnic Armed Organizations
EMT-type 1 = Emergency Medical Team Type 1
FAO = Food and Agriculture Organization
FET = Field Epidemiology Training
GACVS = Global Advisory Committee on Vaccine Safety
GAVI = Global Alliance for Vaccines and Immunization
HIV = Human Immunodeficiency Virus
ILI = Influenza-Like Illness
MERS-CoV = Middle East Respiratory Syndrome Corona Virus
MIS-C = Multisystem Inflammatory Syndrome In Children
MMR = Mumps and Rubella
MoH = Ministry of Health
NAAT = Nucleic Acid Amplification Testing
NAP-COVID-19 = National Action Plan COVID-19
NCD = Noncommunicable Disease
nCoV = Novel coronavirus
PHEIC = Public Health Emergency of International Concern
PHSM = Public Health and Social Measures
RNA = Ribonucleic Acid
RPHL = Regional Public Health Laboratories Network
RT-PCR = Reverse Transcription Polymerase Chain Reaction
SAGE = Strategic Advisory Group of Experts
SARI = Severe Acute Respiratory Illness
SARS-CoV = Severe Acute Respiratory Syndrome Coronavirus
SPRP = Strategic Preparedness and Response Plan
VOC = Variant of Concern
VOI = Variant of Interest
VUM = Variant Under Monitoring
WOAH = World Organisation for Animal Health
WHO = World Health Organization

COVID-19

Introduction

On December 31, 2019, the WHO China Country Office was notified of a cluster of pneumonia cases of unknown cause in Wuhan, Hubei Province (WHO, 2020). By January 3, 2020, 44 cases had been reported, including 11 severe and 33 stable. The implicated seafood and live animal market was closed on January 1 for sanitation, and all patients were isolated and treated in Wuhan medical facilities. Most presented with fever and some with breathing difficulties, while chest radiographs showed invasive lung lesions. Preliminary investigations found no clear evidence of human-to-human transmission or healthcare worker infections. As of January 5, the source remained unclear, though animal exposure was suspected. Given the concentration of cases, WHO advised continued surveillance of respiratory infections but did not recommend travel restrictions or specific measures for travellers, except that those with symptoms during or after travel should seek medical attention and disclose their travel history.

On January 7, 2020, Chinese authorities identified a nCoV, isolated and ruled out other respiratory pathogens such as influenza, SARS-CoV, and MERS-CoV and shared the genetic sequence of the virus on January 12 to support global diagnostic development (WHO, 2020a). As of January 12, 41 confirmed cases had been reported, including seven severe cases, six recoveries, and one death in a patient with underlying conditions. No cases had been reported outside Wuhan at that time, and WHO expressed confidence in the ongoing investigations and China's commitment to transparency.

On January 13, 2020, Thailand's Ministry of Public Health reported the first imported case of laboratory-confirmed novel coronavirus (2019-nCoV), marking the first infection detected outside China (WHO, 2020b). Within a month, by January 31, 2020, confirmed cases had been reported in 19 other countries (WHO, 2020c). The WHO then declared 2019-nCoV a Public Health Emergency of International Concern (PHEIC) on 30 January 2020 (WHO, nd).

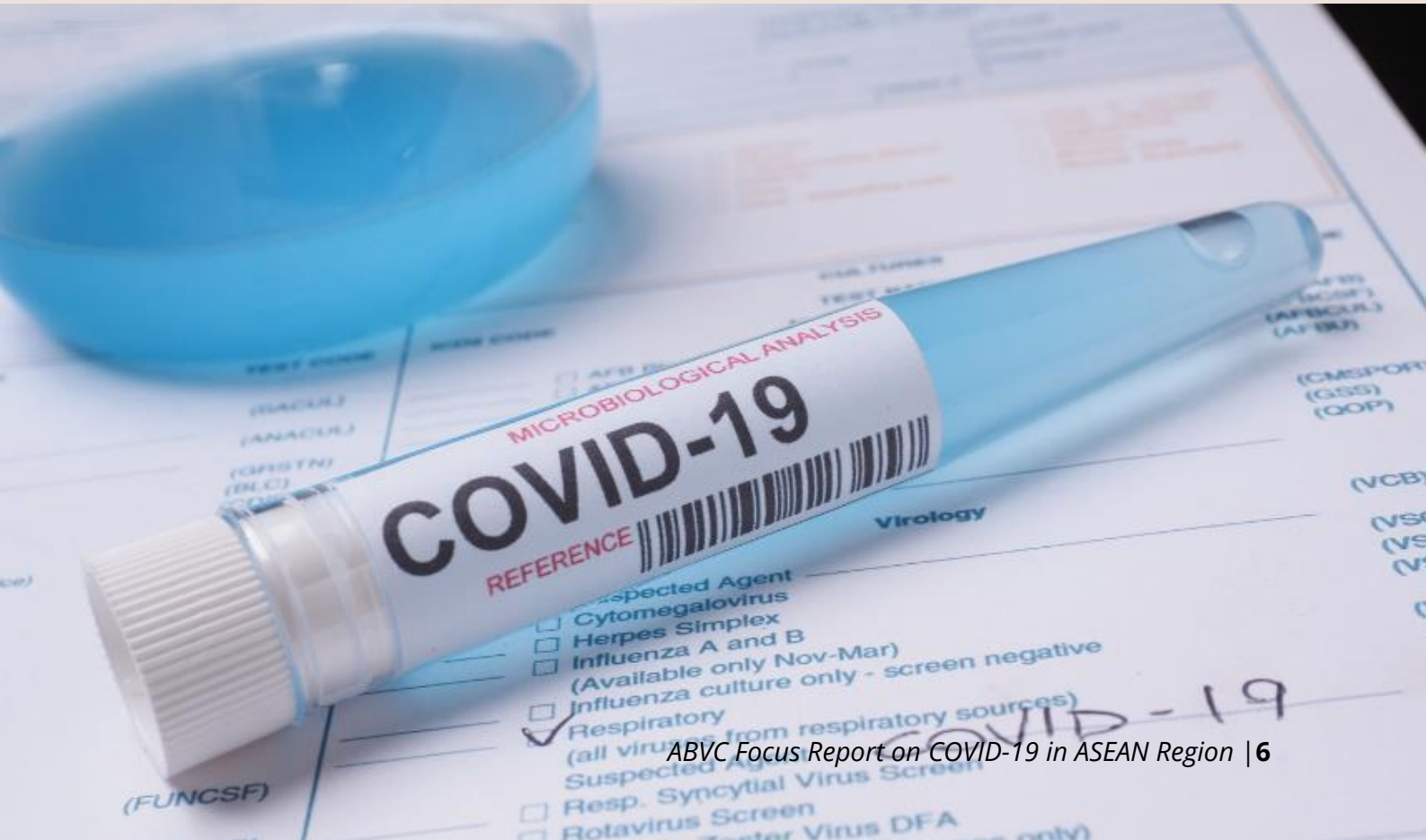
On February 11, 2020, the WHO officially named the disease caused by the novel coronavirus as COVID-19 (WHO, 2020d). The name, which stands for Coronavirus Disease 2019, was selected in coordination with the WOAH and the FAO of the United Nations. The naming follows established guidelines to avoid references to geographical locations, animals, individuals, or groups, in order to minimize stigma and promote consistency in global communication. On March 11, 2020, the WHO characterized COVID-19 outbreak as a pandemic (WHO, 2020e).

The WHO released a series of policy briefs in 2022 and 2023 to help countries

manage SARS-CoV-2 transmission, especially among high-risk and vulnerable populations, and minimize the disease's impact. Five years on, the COVID-19 landscape has shifted considerably. With widespread immunity from vaccination and past infection, current SARS-CoV-2 variants are generally associated with milder illness and lower hospitalization rates. As a result, most countries have lifted public health and social measures and ended national emergency declarations. However, despite these developments, the virus remains in active circulation and continues to strain health systems.

Methods

This report applies a comprehensive literature review to examine the global COVID-19 landscape, with an emphasis on the ASEAN region. Data were sourced from major scientific databases such as PubMed, Embase, and Scopus, as well as official reports from the WHO, ASEAN Member States (AMS), and other authoritative publications. Information on disease incidence, diagnostic criteria, preventive measures, and policy strategies was also drawn from credible institutional and media sources. This integrated approach supports a detailed analysis of current trends, epidemiological dynamics, and key challenges in managing COVID-19 across the ASEAN Region.



Case Definition and Clinical Features

Case Definition

As part of its global public health surveillance strategy, the WHO has established a standardized case definition for suspected SARS-CoV-2 infection. This definition is intended to support the early identification and classification of individuals who may require diagnostic testing, clinical evaluation, or public health intervention. The criteria for a suspected case include a combination of clinical symptoms, epidemiological links, and diagnostic test results. These are categorized into three distinct groups, as outlined in Table 1 (WHO, 2022):

Table 1. Case definitions of COVID-19 infection

Category	Criteria
Suspected Case of SARS-CoV-2 Infection	**Criteria A** A person who meets the defined clinical criteria or epidemiological criteria, including: • **Clinical criteria:** Acute onset of fever AND cough (ILI) **OR** acute onset of at least three of: fever, cough, general weakness/fatigue, headache, myalgia, sore throat, coryza, dyspnea, gastrointestinal symptoms such as nausea/diarrhea/anorexia. **OR** • **Epidemiological criteria:** Contact with a probable or confirmed case, or linked with a COVID-19 cluster. **Criteria B** A patient presenting with SARI, defined as an acute respiratory infection characterized by a history of fever or measured fever ≥38 °C, accompanied by cough, with symptom onset within the previous 10 days, and requiring hospitalization. **Criteria C** A person who is asymptomatic or meets epidemiological criteria and has a positive result from a professional-use or self-administered SARS-CoV-2 Ag-RDT.
Probable Case of SARS-CoV-2 Infection	**Criteria A** A patient who fulfills the clinical criteria AND is a contact of a probable or confirmed case or is epidemiologically linked to a COVID-19 cluster. **Criteria B** A death of unknown cause in an adult who experienced respiratory distress prior to death AND had a documented epidemiological link, either through contact with a probable or confirmed case or association with a COVID-19 cluster.
Confirmed Case of SARS-CoV-2 Infection	**Criteria A** An individual with a positive result from a NAAT, regardless of the presence of clinical symptoms or epidemiological linkage. **Criteria B** A person who meets clinical AND/OR epidemiological criteria (Suspect Case A) with tests positive using a professional-use or self-administered SARS-CoV-2 Ag-RDT.

Note:

- Due to emerging variants being more transmissible and highly likely to infect close contacts, epidemiological criteria were included to qualify asymptomatic contacts for testing in countries with sensitive testing strategies.
- A group of symptomatic individuals, linked by time, geographic location, and common exposures, with at least one NAAT-confirmed case or two epidemiologically linked cases, meeting clinical criteria of Suspect case definition A or B, with positive professional use or self-test Ag-RDT (based on ≥97% specificity and >99.9% probability of true positive).

Transmission

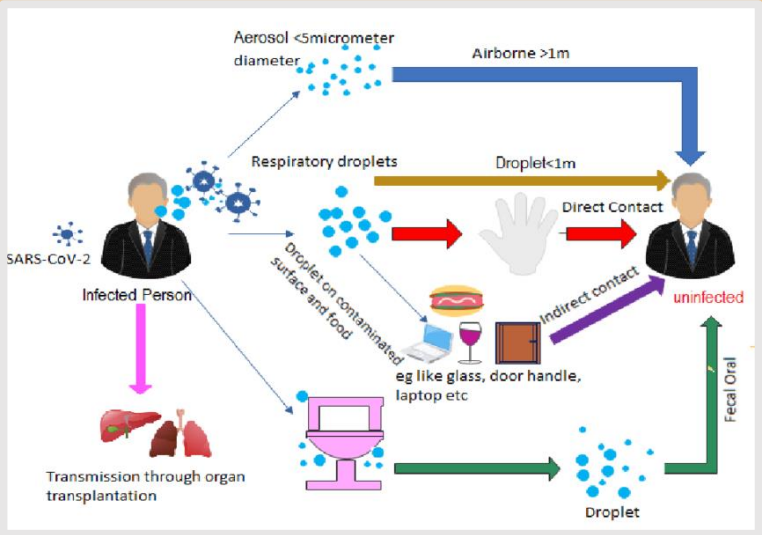


Figure 1. Transmission of COVID-19 (Source: https://rootspress.org/journals/index.php/agribiol/article/view/643/765)

Current evidence suggests that the virus spreads mainly between people who are in close contact with each other, for example at a conversational distance (WHO, nd). The virus can spread from an infected person's mouth or nose in small liquid particles when they cough, sneeze, speak, sing or breathe. Another person can then contract the virus when infectious particles that pass through the air are inhaled at short range (this is often called short-range aerosol or short-range airborne transmission) or if infectious particles come into direct contact with the eyes, nose, or mouth (droplet transmission).

The virus can also spread in poorly ventilated and/or crowded indoor settings, where people tend to spend longer periods of time. This is because aerosols can remain suspended in the air or travel farther than conversational distance (this is often called long-range aerosol or long-range airborne transmission).

People may also become infected when touching their eyes, nose or mouth after touching surfaces or objects that have been contaminated by the virus.

Risk Factors and Risk Groups

Evidence indicates that older adults and individuals of any age with underlying health conditions are at increased risk of developing severe COVID-19 (WHO, 2020). These groups are more likely to experience serious complications and adverse outcomes compared to the general population.

Noncommunicable disease (NCD) risk factors are strongly associated with increased COVID-19 severity and mortality (WHO, 2020). Obesity has been shown to increase the risk of severe illness by up to seven times, while tobacco use raises the risk of severe complications and mortality by approximately 1.5 times. Alcohol consumption impairs immune response and affects decision-making, leading to reduced adherence to infection prevention measures.

Physical inactivity further contributes to poor outcomes by weakening immune function and increasing the risk of NCDs such as cardiovascular disease, hypertension, diabetes, and obesity, all of which are linked to more severe COVID-19 cases. Environmental exposures, particularly air pollution, are also believed to exacerbate respiratory vulnerability and may increase the risk of severe infection.

A range of comorbidities has been consistently linked to worse COVID-19 outcomes in multiple meta-analyses, including diabetes, hypertension, cardiovascular and cerebrovascular diseases, COPD, asthma, and cancer. Notably, individuals with uncontrolled diabetes or hematologic cancers face a particularly high risk of severe illness and death.

Pregnant and recently pregnant individuals are at a higher risk of severe COVID-19 due to factors like advanced maternal age, obesity, pre-existing medical conditions, and pregnancy-specific disorders (WHO, 2023). Being unvaccinated or living with immunocompromised conditions like HIV further increases susceptibility to severe outcomes.

Clinical Presentation

COVID-19 presents with a wide range of clinical signs and symptoms that vary by age, immune status, and comorbid conditions (WHO, 2023). The most commonly reported symptoms include fever (83–99%), cough (59–82%), fatigue (44–70%), anorexia (40–84%), shortness of breath (31–40%), and myalgia (11–35%). Other frequently observed but non-specific symptoms include sore throat, nasal congestion, headache, diarrhoea, nausea, and vomiting. A notable early indicator in some patients is the loss of smell (anosmia) or taste (ageusia), which may occur prior to the onset of respiratory symptoms.

Figure 2. Most Common Symptoms of COVID-19 (Source: https://www.who.int/images/default-source/searo---images/countries/indonesia/infographics/covid19_symptoms.jpg?sfvrsn=b599a602_5)

Neurological manifestations, although less common, have also been documented. These include dizziness, agitation, generalized weakness, seizures, and symptoms suggestive of cerebrovascular events, such as dysarthria, visual disturbances, sensory deficits, and impaired balance or gait.

Atypical presentations are more frequently observed in older adults and immunocompromised individuals, including symptoms such as confusion, reduced alertness, limited mobility, anorexia, and gastrointestinal disturbances, often in the absence of fever. In pregnant individuals, symptoms overlap with physiological changes, obstetric complications (e.g., pre-eclampsia), or comorbid infections (e.g., malaria) may pose diagnostic challenges. In children, the presentation tends to be milder, and classical symptoms like fever or cough may be less frequently reported.

Figure 3. Serious COVID-19 symptoms requiring immediate medical care (Source: https://www.who.int/images/default-source/searo---images/countries/indonesia/infographics/covid19_symptoms.jpg?sfvrsn=b599a602_5)

The WHO categorizes the COVID-19 severity into four clinical classifications (WHO, 2023):

a. **Mild disease**: Non-pneumonic symptoms without evidence of hypoxia or respiratory distress.
b. **Moderate disease**: Presence of pneumonia without signs of severe respiratory compromise.
c. **Severe disease**: Severe pneumonia with symptoms such as respiratory rate >30 breaths per minute, severe dyspnoea, or oxygen saturation <90% on room air.
d. **Critical disease**: Life-threatening conditions including ARDS, sepsis, septic shock, acute thrombosis, and MIS-C.

This classification aids in clinical management, triage, and allocation of healthcare resources, particularly in high-risk populations and settings with limited capacity.

Clinical Diagnostic

The WHO recommends that all individuals suspected of having COVID-19 undergo, at minimum, the collection of respiratory specimens for NAAT, such as RT-PCR, as the primary diagnostic method (WHO, 2023). In some cases, repeated sampling from the upper or lower respiratory tract may be necessary to confirm the diagnosis. When appropriate and validated by the receiving laboratory, additional specimen types, such as fecal samples, may also support diagnostic efforts. In deceased individuals, the collection of postmortem specimens is advised. Where clinically indicated, testing for other respiratory pathogens should be conducted in accordance with local protocols. Although NAAT remains the standard for COVID-19 diagnosis, antigen-based testing may be incorporated into diagnostic algorithms in settings where NAAT is unavailable or where prolonged turnaround times limit clinical utility. In such cases, testing procedures must adhere strictly to the instructions, with trained personnel and robust quality assurance systems in place. For patients with strong clinical suspicion of COVID-19 but repeatedly negative NAAT results, paired serum samples collected during the acute and convalescent phases (2–4 weeks apart) may help retrospectively assess infection status, provided that validated quantitative serological assays and experienced laboratory personnel are available to interpret results.

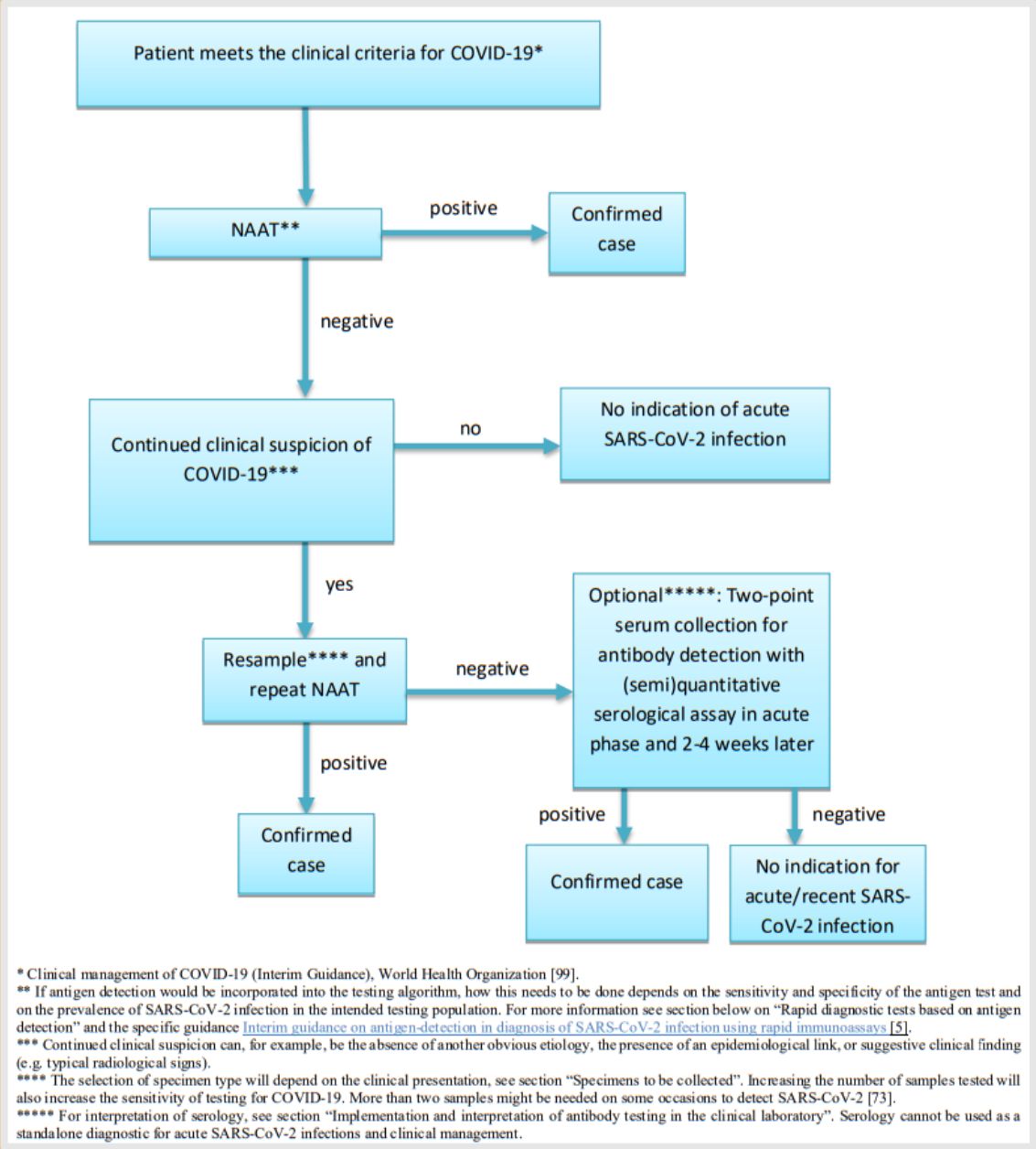


Figure 4. Diagnostic flow diagram for the detection of acute SARS-CoV-2 infection in individuals with clinical suspicion for COVID-19 (Source: https://iris.who.int/bitstream/handle/10665/334254/WHO-2019-nCoV-laboratory-2020.6-eng.pdf)

Epidemiology

Global Situation

Global Distribution of COVID-19 Cases

As of June 1, 2025, the WHO has recorded 778,050,175 cases of COVID-19 with 7,096,935 deaths of COVID-19 globally from 240 countries (CFR=0.91%) (Figure 5) (WHO, 2025). COVID-19 cases continue to be reported in all WHO Regions, including the South-East Asia and Western Pacific Regions, where ASEAN Member States are located.

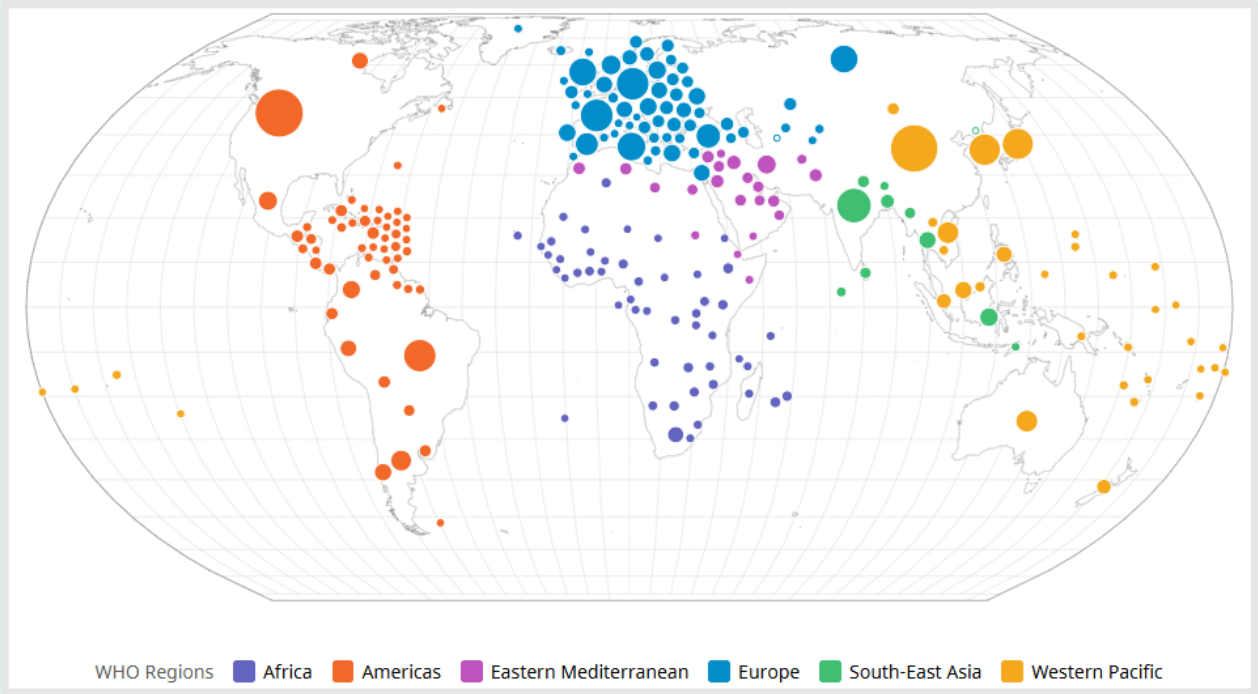


Figure 5. Global distribution of COVID-19 cases as of June 1, 2025 (Source: https://data.who.int/dashboards/covid19/cases?n=c)

Global trend of weekly cases of COVID-19 (2023 to 2025)

As shown in Figure 6, there was a significant increase in new reported cases of COVID-19 globally in mid-2023 (WHO, 2025). The increase was likely caused by a combination of biological factors (such as new variants including XBB.1.5, EG.5, and BA.2.86, and waning population immunity) and social factors (such as the relaxation of health protocols and increased mobility). Between early and mid-2023, several new SARS-CoV-2 variants, most notably XBB.1.5, EG.5, and BA.2.86, emerged and gained prevalence due to mutations that enhanced their ability to infect nasal epithelial cells and evade neutralizing antibodies from previous infections or vaccinations (Planas, et al, 2024). XBB.1.5 and EG.5, both sublineages of Omicron, exhibited increased viral fitness and immune evasion, with EG.5.1.3 demonstrating the highest replication efficiency among

variants tested in nasal cells, contributing to its rapid transmission (Liu, et al, 2024). Over time, immunity from both vaccination and previous infection declines, particularly against mild infection (Liu, et al, 2025). This waning immunity, combined with the emergence of antigenically distinct variants, led to higher susceptibility in the population.

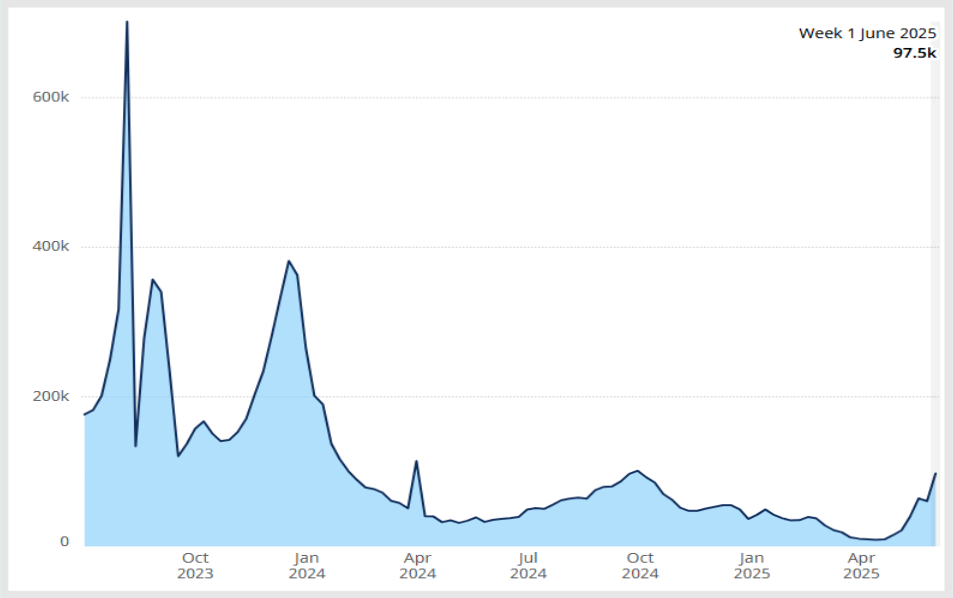


Figure 6. Global COVID-19 cases reported to WHO (2023 to 2025) (Source: https://data.who.int/dashboards/covid19/cases?n=c)

COVID-19 Variants

Viruses naturally change and evolve as they spread from person to person over time. When these genetic changes become significant, the virus may be classified as a new "variant." To identify variants, scientists sequence the virus's genetic material and analyse the differences to determine how the virus has changed. Since the COVID-19 pandemic emerged in 2020, SARS-CoV-2 has been circulating and evolving globally. These changes have led to the emergence of variants in many countries. The more notable variants are classified into three categories: variants under monitoring, variants of interest, and variants of concern (WHO, 2024).

A **Variant Under Monitoring (VUM)** refers to a SARS-CoV-2 variant that may require prioritized observation by public health authorities. This designation indicates that the variant could potentially pose an additional threat than currently circulating strains, warranting further investigation and tracking.

A **Variant of Interest (VOI)** is a SARS-CoV-2 variant that has genetic changes known to affect virus characteristics such as transmissibility, disease severity,

diagnostic detectability, or treatment response. A VOI may also demonstrate increased spread compared to other variants, indicating a potential emerging risk to global public health.

A **Variant of Concern (VOC), assigned as a Greek letter** is a variant that meets the criteria of a VOI and, in addition, has demonstrated one or more of the following:

a. cause a detrimental change in disease severity,
b. have a substantial impact on the ability of health systems to provide care to patients with COVID-19 or other illnesses and therefore require major public health interventions, or
c. there is a significant decrease in the effectiveness of available vaccines in protecting against severe disease.

Since early 2025, global SARS-CoV-2 variant trends have shifted slightly. The circulation of variant LP.8.1 has declined, while reports of NB.1.8.1, a VUM, have increased, accounting for 10.7% of global sequences as of mid-May. Although recent rises in SARS-CoV-2 activity align with levels observed during the same period last year, there is still no clear seasonal pattern to its transmission, and global surveillance remains limited. Continued monitoring is essential. WHO urges all Member States to adopt a risk-based, integrated approach to COVID-19 management, as recommended in the Director-General's Standing Recommendations (WHO, 2025).

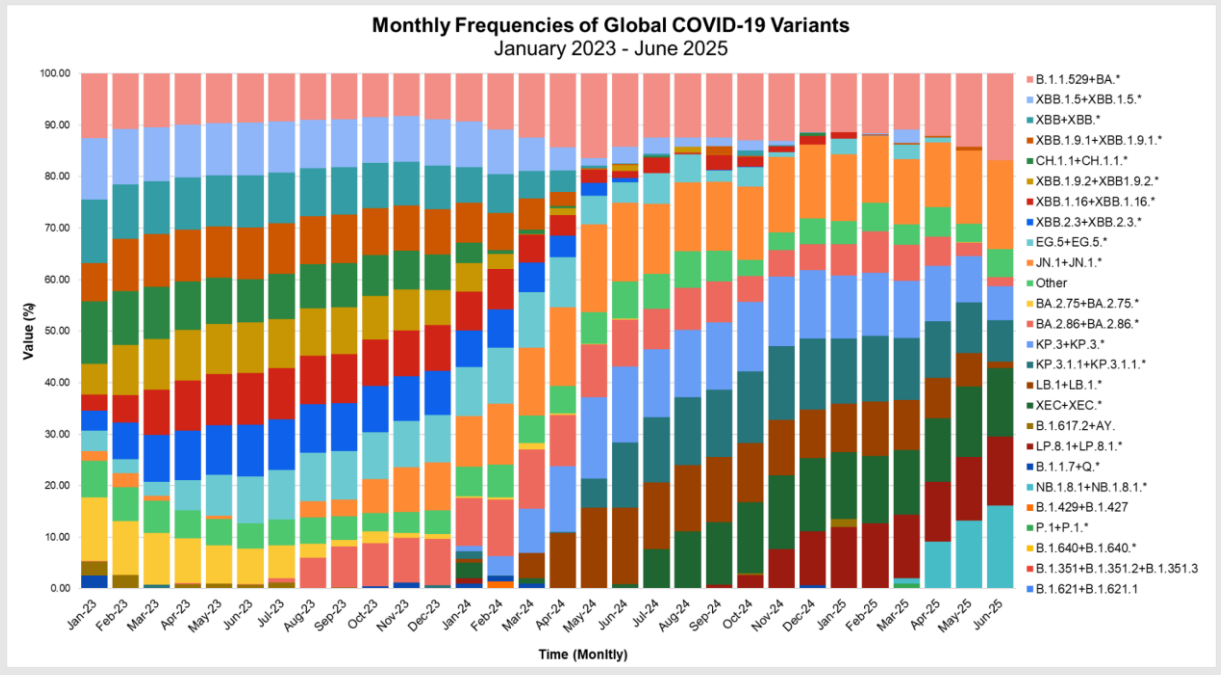


Figure 7. Monthly Frequency of Global COVID-19 Variants, January 2023 to June 2025 (Source: https://gisaid.org/hcov-19-variants-dashboard/)

Burden of COVID-19 in the ASEAN Region

Figure 8 illustrates weekly new COVID-19 cases and deaths in the ASEAN region from January 1, 2020, to May 30, 2025. The data show three major waves of infection. The first significant surge in both cases and deaths occurred in mid-2021, followed by a much larger wave of cases in early 2022, with weekly cases peaking at over 2.5 million. A smaller but noticeable spike followed mid-2022. Deaths peaked during the mid-2021 wave, reaching nearly 20,000 in a single week, but were considerably lower during later surges, indicating the possible impact of vaccination, improved clinical management, or less severe variants. From late 2022 onward, both cases and deaths declined sharply and remained low through mid-2025, suggesting sustained epidemic control in the region.

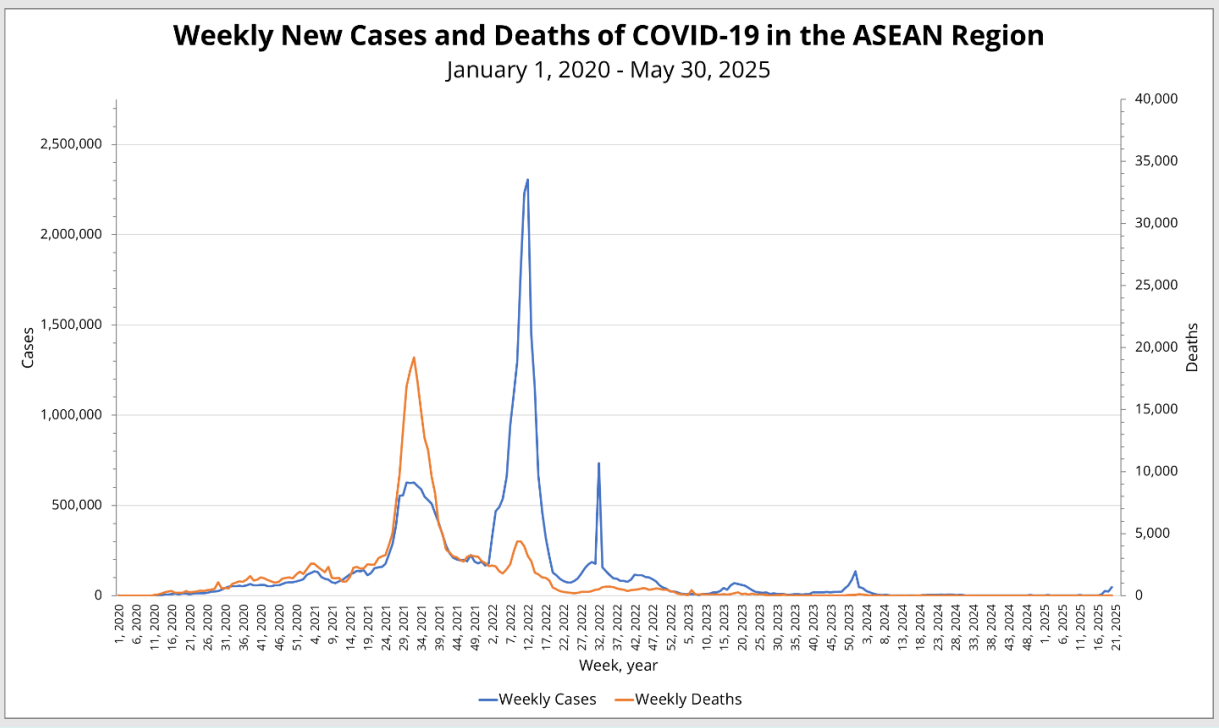


Figure 8. Weekly cases and deaths of COVID-19 in the ASEAN Region (Source: https://abvc.asean-phe.org/)

Figure 9 illustrates the monthly distribution of circulating COVID-19 variants in the ASEAN region from January 2023 to June 2025. Throughout this period, a dynamic shift in variant dominance is observed. In early 2023, the landscape was characterized by a diverse mix of XBB sublineages, alongside remnants of earlier Omicron variant, BA.2.75. In early to mid-2024, XBB+XBB.* became the dominant lineage, followed by the emergence of newer variants such as JN.1, KP.3, KP.3.1.1. From late 2024 through mid-2025, a notable transition occurred with the rapid rise of the XEC lineage, which became highly prevalent by

early 2025. This trend highlights the ongoing evolution of the virus and underscores the importance of sustained genomic surveillance to guide regional response efforts.

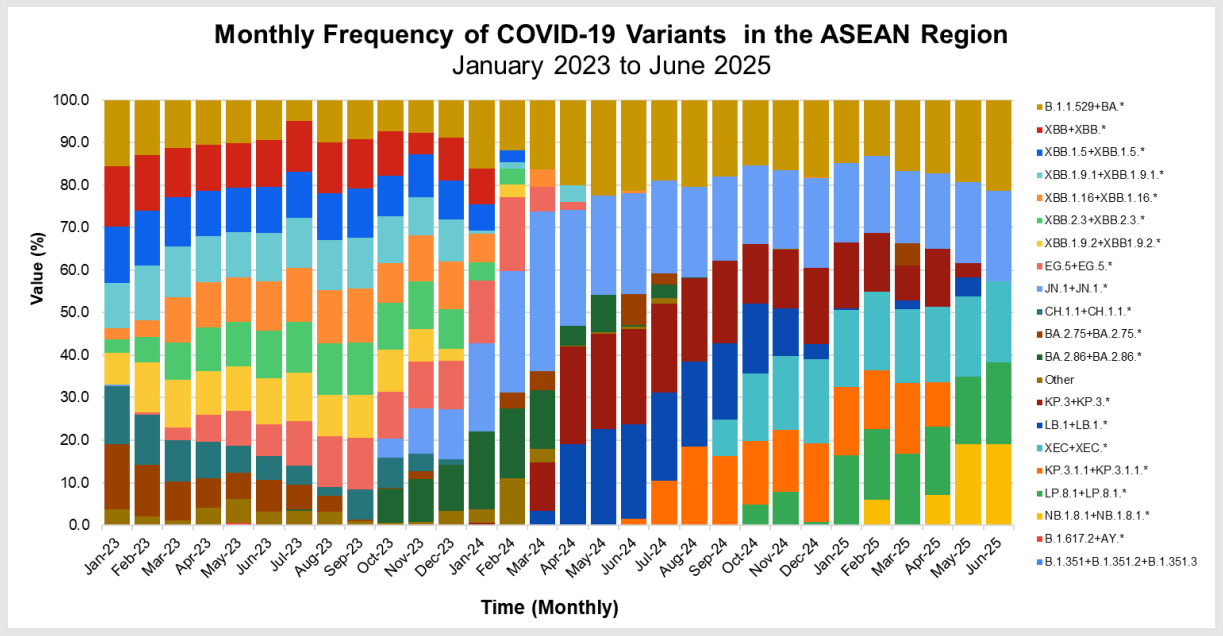


Figure 9. Monthly Frequency of COVID-19 Variants in the ASEAN Region, January 2023 to June 2025 (Source: https://gisaid.org/hcov-19-variants-dashboard/)

Despite the detection of multiple COVID-19 variants across the ASEAN Region, the distribution and dominance of each variant differ by member state. This reflects variations in transmission dynamics, population immunity, surveillance capacity, and reporting practices. Further details on the COVID-19 variants currently circulating in each ASEAN Member State are presented in Figure 10 below.:

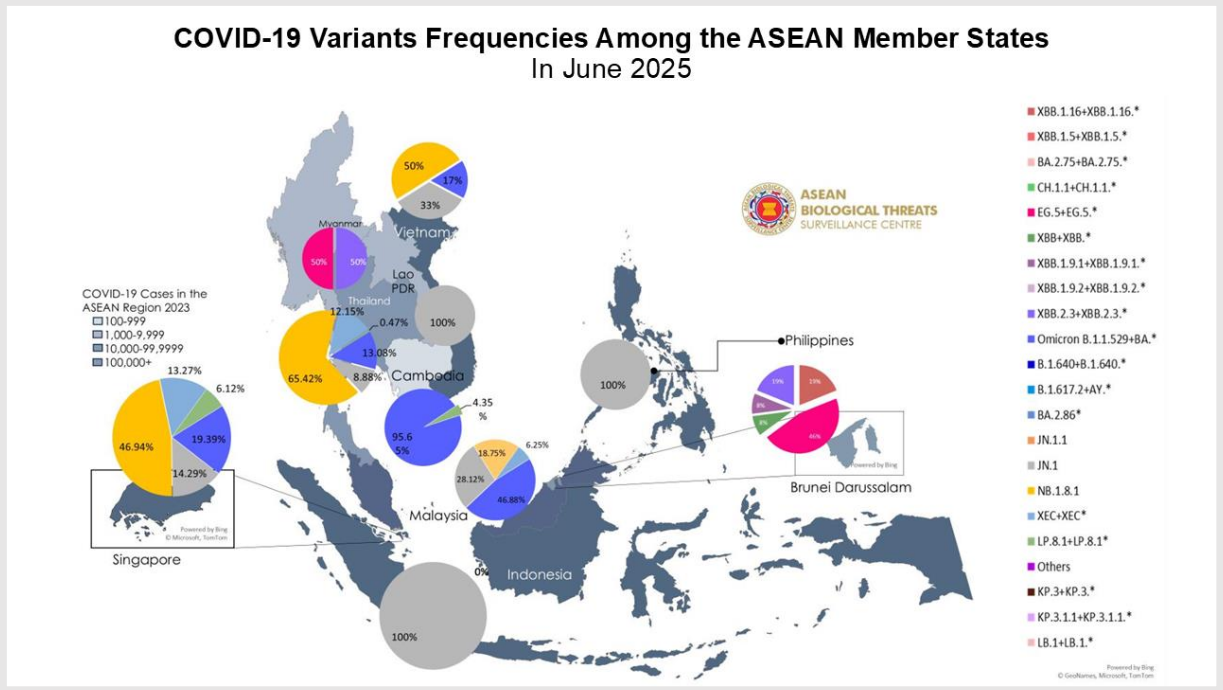


Figure 10. Distribution of COVID-19 Variants in the ASEAN Member States, In June 2025 (Source: https://gisaid.org/hcov-19-variants-dashboard/)

Further, weekly COVID-19 case and death data for each ASEAN Member State are presented in the following section, covering the period from Epidemiological Week 1, 2020, to Week 21 of 2025, ending on May 30, 2025.

Brunei Darussalam

Figure 11 illustrates the weekly new COVID-19 cases and deaths in Brunei Darussalam from January 1, 2020, to May 30, 2025. Initial transmission in 2020 was minimal, with low case and death counts. A notable surge began around mid-2021, with a sharp rise in weekly deaths followed by increased case counts. The most significant wave occurred in early 2022, where weekly cases peaked at nearly 30,000, accompanied by an increase in deaths. Several smaller waves were observed throughout mid-2022 to early 2023, including a death peak around week 20 of 2023 despite lower case numbers. From mid-2023 onward, both cases and deaths showed a declining trend, with only minor spikes, including a brief rise in cases around week 50 of 2023. By 2024 and into 2025, weekly COVID-19 activity remained low, with no major resurgence observed.

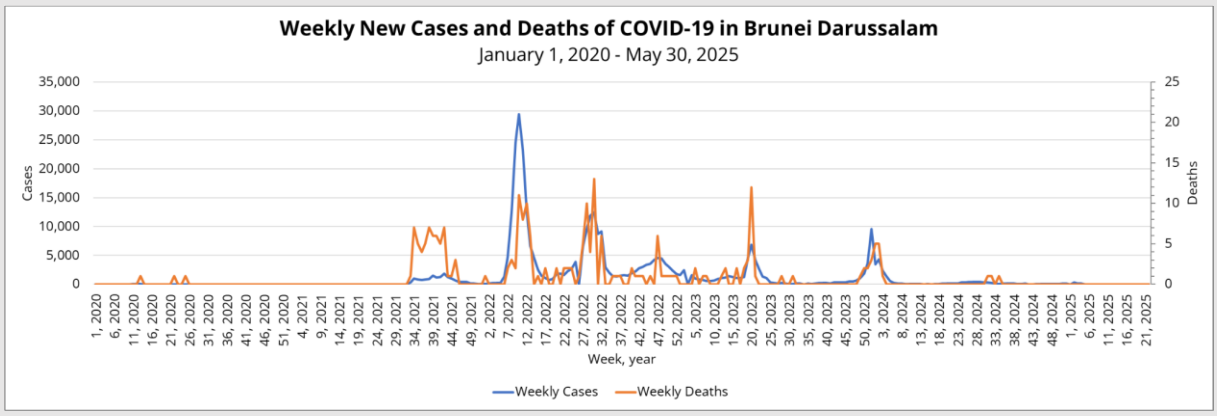


Figure 11. Weekly cases and deaths of COVID-19 in Brunei Darussalam (Source: https://abvc.asean-phe.org/)

Cambodia

During 2020, both cases and deaths in Cambodia remained low. A sharp rise began in early 2021, leading to multiple waves of transmission and mortality throughout the year (Figure 12). The most significant surge occurred between weeks 14 and 39 of 2021, when weekly cases exceeded 6,000 and deaths peaked at nearly 300 from week 24 to 34 of 2021. Another wave followed in early 2022, though it was less severe in terms of deaths. After mid-2022, both cases and deaths dropped markedly and remained low through to 2025, with only occasional small case spikes and minimal reported deaths.

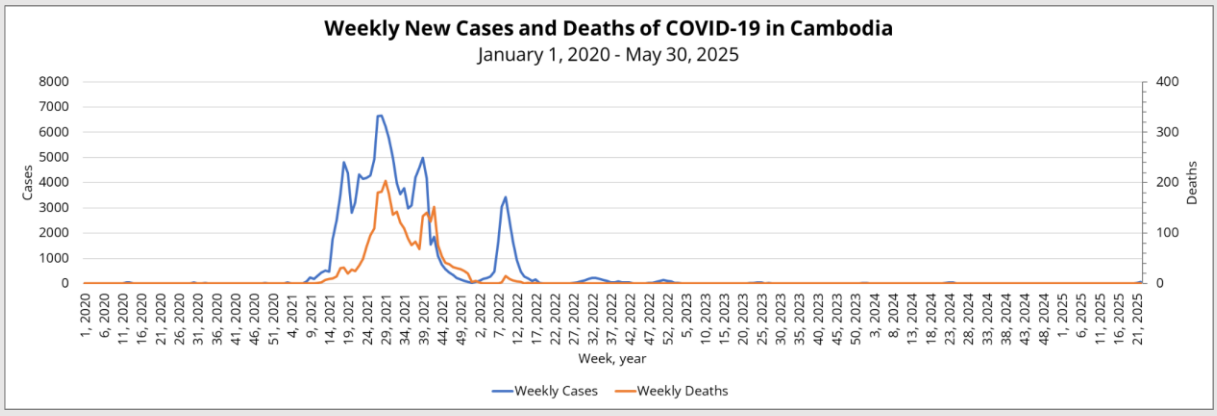


Figure 12. Weekly cases and deaths of COVID-19 in Cambodia (Source: https://abvc.asean-phe.org/)

Indonesia

Figure 13 displays the weekly new COVID-19 cases and deaths in Indonesia from January 1, 2020, to May 30, 2025. Following a gradual increase in 2020, two major waves were observed. The first, in mid-2021, saw weekly cases peak at over 350,000 and deaths surpass 10,000. A second and even larger wave of cases occurred in early 2022, with cases peaking near 400,000, though deaths were substantially lower. After this, COVID-19 activity declined significantly. From mid-2022 onward, Indonesia experienced only minor fluctuations in weekly cases and very low death counts, with no significant resurgence through to mid-2025.

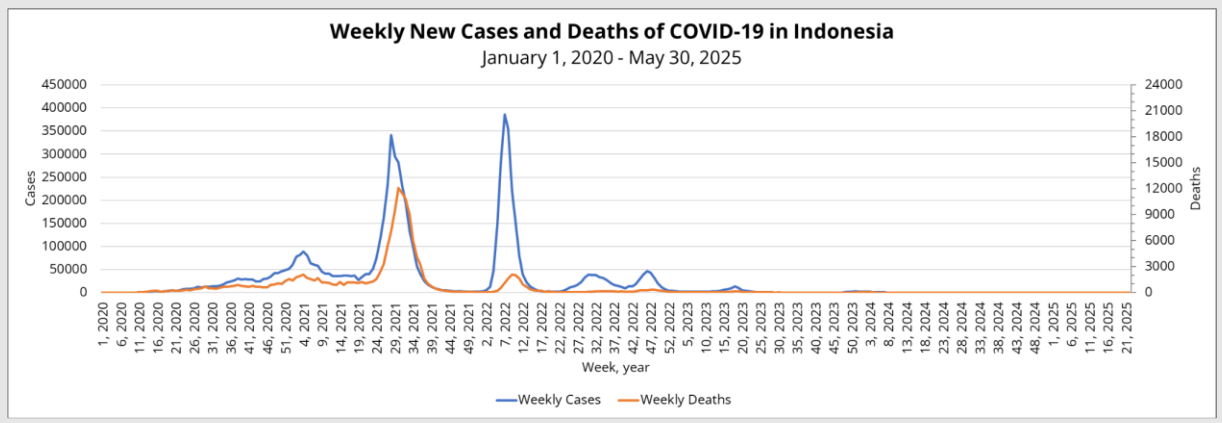


Figure 13. Weekly cases and deaths of COVID-19 in Indonesia (Source: https://abvc.asean-phe.org/)

Lao People's Democratic Republic

As shown in Figure 14 from 2020 to early 2021, reported cases and deaths of COVID-19 in Lao PDR remained low. A sharp rise began in the second half of 2021, with cases and deaths both increasing significantly through late 2021 and into early 2022. The highest peak in cases occurred around week 11 of 2022, reaching over 15,000 weekly cases, while deaths peaked earlier, around the end of 2021, at over 50 per week. Following this major wave, both cases and deaths declined rapidly. From mid-2022 onward, Lao PDR reported fewer cases and almost no deaths, with COVID-19 activity remaining at very low levels through to mid-2025. The data suggest a concentrated outbreak period followed by sustained control of transmission.

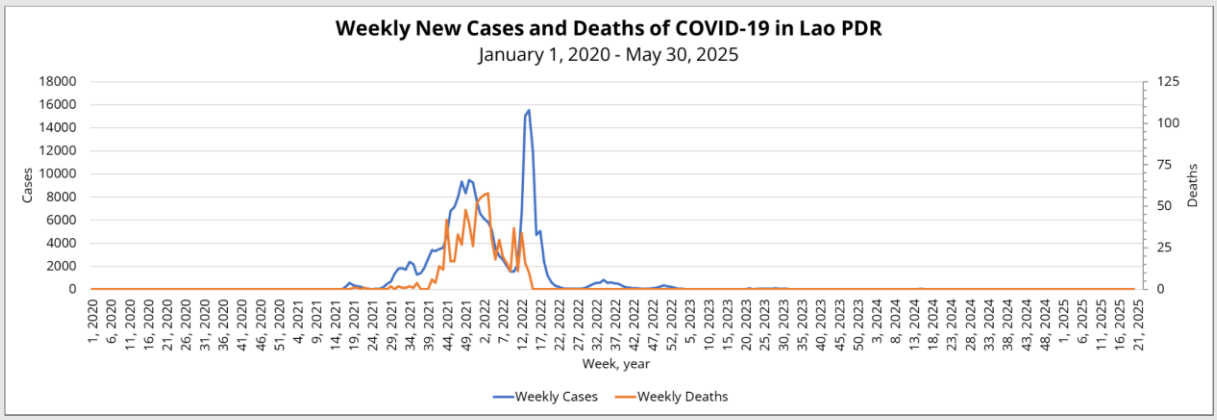


Figure 14. Weekly cases and deaths of COVID-19 in Lao PDR (Source: https://abvc.asean-phe.org/)

Malaysia

Figure 15 presents the weekly new COVID-19 cases and deaths in Malaysia from January 1, 2020, to May 30, 2025. Initial transmission was low throughout 2020, followed by a substantial rise in cases and deaths during mid to late 2021. The first major peak occurred around week 30 of 2021, with weekly cases reaching 150,000 and deaths surpassing 2,000. A second, even larger wave of cases was observed in early 2022, peaking at over 200,000 cases per week, although the death toll was lower than in the first wave. Throughout the rest of 2022 and into 2023, several smaller waves occurred, but both cases and deaths steadily declined. From mid-2023 to mid-2025, COVID-19 activity remained low with minimal deaths.

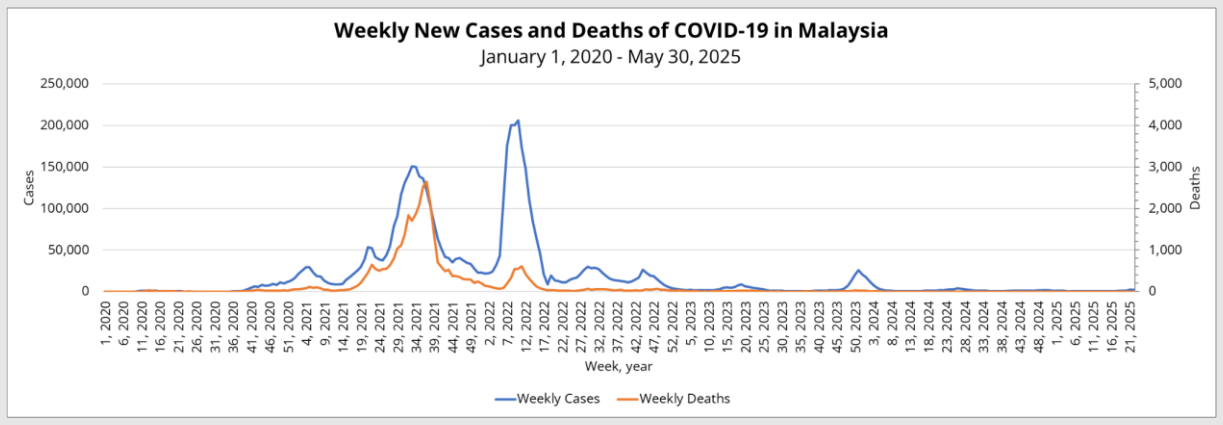


Figure 15. Weekly cases and deaths of COVID-19 in Malaysia (Source: https://abvc.asean-phe.org/)

Myanmar

As shown in Figure 16, initial case numbers in Myanmar were low in 2020, with the first noticeable rise occurring in late 2020 and early 2021. A significant surge was observed mid-2021, with weekly cases peaking at around 40,000 and deaths rising sharply above 2,000 per week, marking Myanmar's most severe wave. A second, smaller wave occurred in early 2022, peaking at around 20,000 weekly cases but with relatively fewer deaths. Afterward, both cases and deaths declined markedly. From mid-2022 through mid-2025, Myanmar reported only low-level transmission with minimal deaths, and no major resurgence.

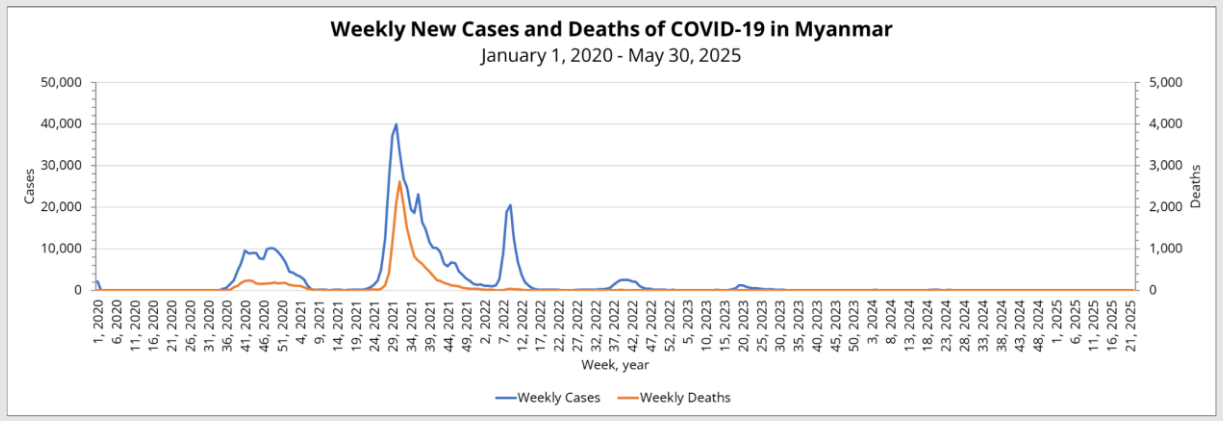


Figure 16. Weekly cases and deaths of COVID-19 in Myanmar (Source: https://abvc.asean-phe.org/)

Philippines

Figure 17 illustrates weekly new COVID-19 cases and deaths in the Philippines from January 1, 2020, to May 30, 2025. Early in the pandemic, both cases and deaths began to rise gradually in mid-2020, followed by repeated waves throughout 2021. Multiple peaks were observed in 2021, with weekly cases exceeding 100,000 and deaths peaking above 2,500. A sharp spike in cases occurred in early 2022, reaching nearly 250,000 weekly cases, though this wave was associated with relatively fewer deaths. Since the week 32 of 2022, cases and deaths gradually declined, with only minor resurgences. From 2024 onward, COVID-19 activity remained low and stable, with minimal deaths reported.

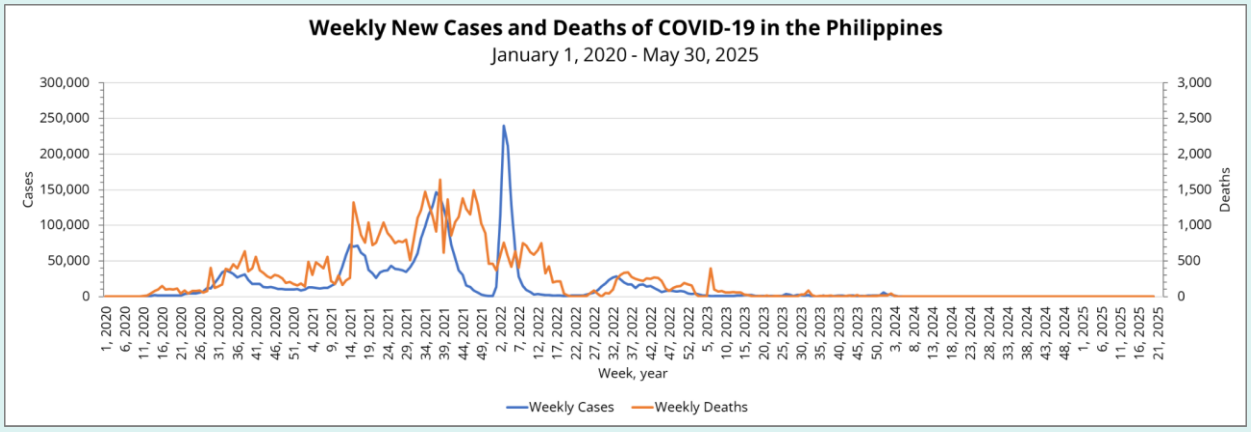


Figure 17. Weekly cases and deaths of COVID-19 in the Philippines (Source: https://abvc.asean-phe.org/)

Singapore

Figure 18 shows the weekly new COVID-19 cases and deaths in Singapore from January 1, 2020, to May 30, 2025. During the initial phase of the pandemic in 2020, cases were relatively low with minimal deaths. A major surge occurred in late 2021 and early 2022 with a noticeable rise in deaths. From week 7 to 12 of 2022, weekly cases exceeded 100,000, with weekly deaths surpassed 70. Subsequent waves followed in 2022 and 2023, including a significant peak around the end of 2023 where cases again approached 100,000 in a week, though deaths remained moderate in comparison. From early 2024 onward, both cases and deaths showed a marked decline, stabilizing at minimal levels by 2025.

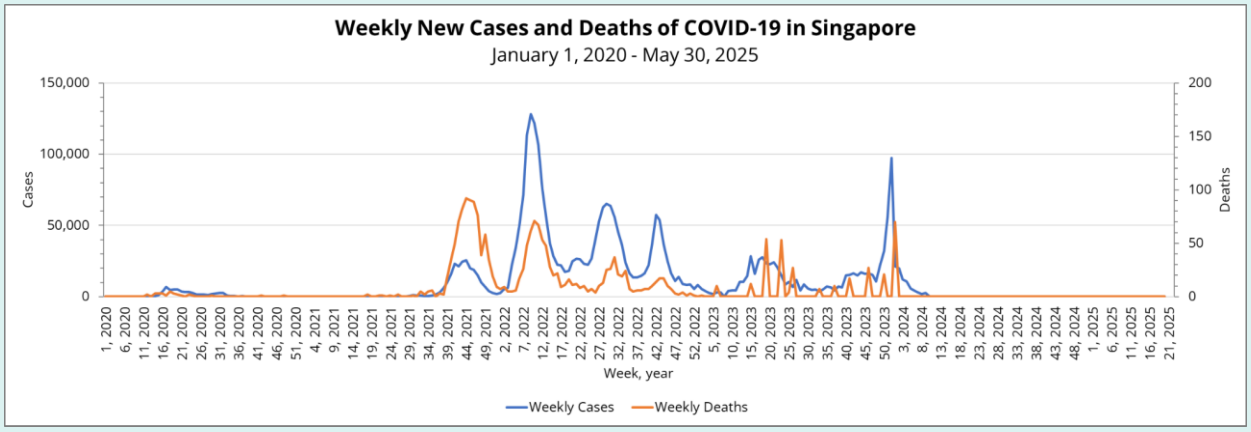


Figure 18. Weekly cases and deaths of COVID-19 in Singapore (Source: https://abvc.asean-phe.org/)

Thailand

Figure 19 shows that Thailand experienced two major waves of infections in 2021 and 2022, with weekly cases peaking at over 150,000 and deaths rising sharply alongside. These waves were followed by a period of relative stability with low case and death numbers throughout 2023 and most of 2024. However, a marked resurgence in cases was observed beginning in early 2025, with a steep rise in infections by late May, though deaths remained comparatively limited.

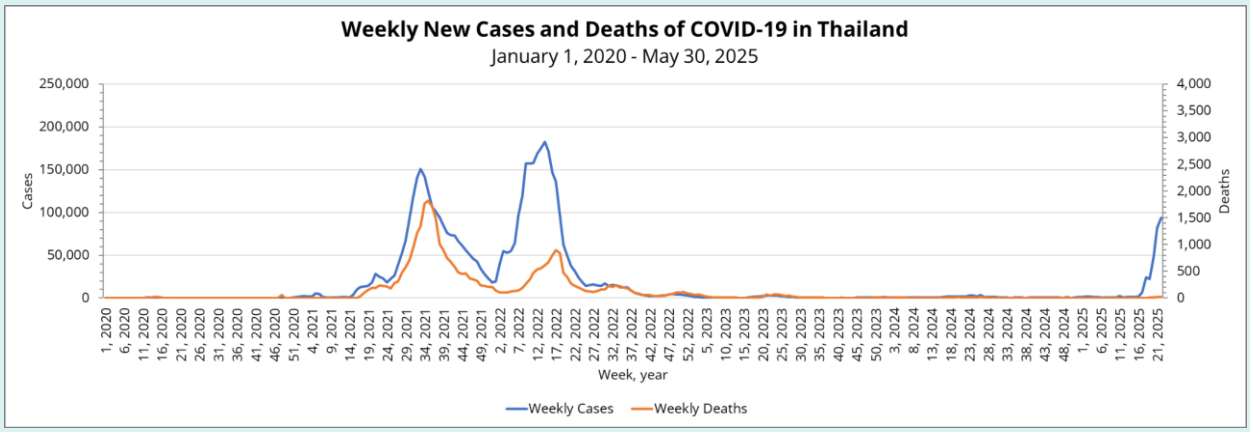


Figure 19. Weekly cases and deaths of COVID-19 in Thailand (Source: https://abvc.asean-phe.org/)

Viet Nam

As illustrated in Figure 20, weekly COVID-19 cases and deaths in Viet Nam up to early 2021, reported case and death numbers remained very low. A sharp increase in deaths was observed in mid-2021, followed by a dramatic surge in cases peaking in March 2022, with nearly two million cases reported per week, marking the country's most intense wave. After this peak, both case and death counts declined rapidly. From mid-2022 through May 2025, Viet Nam reported consistently low levels of new cases and deaths.

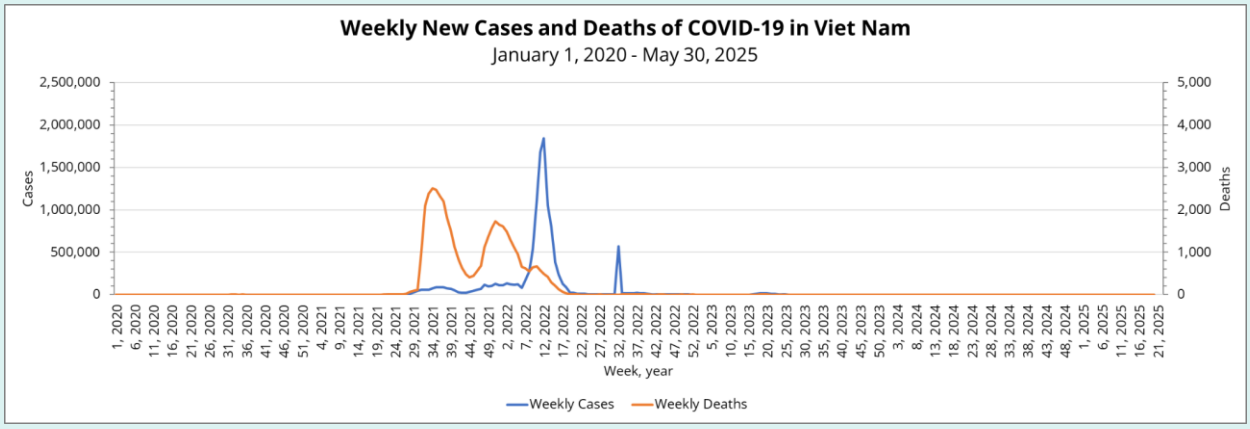


Figure 20. Weekly cases and deaths of COVID-19 in Viet Nam (Source: https://abvc.asean-phe.org/)

Case Management and Prevention

Case Management

Table 2 outlines COVID-19 case management recommendations based on symptom severity and risk factors. It provides guidance on self-isolation, testing, and when to seek hospital care to ensure appropriate and timely treatment. In response to the ongoing pandemic, the WHO has developed guidelines for clinical management of COVID-19, with the latest update on August 18, 2023 (WHO, 2023a).

Table 2. Case management based on severity and risk factors (WHO, 2023a)

Case severity, risk factors*	Recommendations
Mild	1. Patients should be instructed to self-isolate and contact COVID-19 information line for advice on testing and referral. 2. Test suspected COVID-19 cases according to diagnostic strategy. Isolation/cohorting in: a. Health facilities, if resources allow; b. Community facilities (e.g. stadiums, gymnasium, hotels) with access to rapid health advice (i.e. adjacent COVID-19 designated health post/EMT-type 1, telemedicine) 3. Self-isolation at home according to WHO guidance
Moderate, with **no risk factors**	
Moderate, **with risk factors**	1. Patients should be instructed to self-isolate and call COVID-19 hotline for emergency referral as soon as possible. 2. Hospitalization for isolation (or cohorting) and inpatient treatment. 3. Test suspect COVID-19 cases according to diagnostic strategy.
Severe	
Critical	

*Known risk factors for severe COVID-19.

Note : Probable cases should be retested immediately.

Prevention

Currently, there are several vaccines for COVID-19 that have been administered and distributed. In addition, to prevent the spread of the virus, the public is advised to also (WHO, 2023b):

1. **Avoid crowds** and keep **a safe distance** from others
2. **Wear a** properly fitted **mask** when feel sick or close to sick people, if you are at high-risk or in crowded or poorly ventilated areas;
3. **Clean hands** frequently with alcohol-based hand rub or soap and water;
4. **Cover your mouth and nose** when cough or sneeze;
5. **Dispose of used tissues** right away and clean your hands; and
6. If you develop symptoms or test positive for COVID-19, **self-isolate until recovery**.

Figure 21. COVID-19 transmission and protections
(Source: https://cdn.who.int/media/images/default-source/health-topics/coronavirus/myth-busters/infographic-covid-19-transmission-and-protections-final2.jpg?sfvrsn=7fc5264a_2)

Vaccines

Since the outbreak of COVID-19, several vaccines have been successfully developed to reduce transmission. There are more than 200 vaccine candidates in development as of December 2020 and through trials (WHO, 2021) Some of the candidates have become approved vaccines and are distributed to various countries. Since 2021, doses of COVID-19 vaccines that have been administered globally are more than 13 billion doses (WHO, 2024b). Before it gets administered or distributed, the vaccine's candidates must, through large phase III clinical trials, be proven safe and effective to prove that the vaccine's candidates meet the internationally agreed benchmarks for safety and efficacy. The trials require independent evaluations of both the effectiveness and safety data for each vaccine candidate. This includes regulatory assessment and approval in the country where the vaccine is produced before WHO will consider it for emergency use listing or prequalification. Approved vaccines are being monitored by WHO's GACVS, an independent group of experts providing authoritative, scientific advice to WHO on vaccine safety issues of global or regional concern. (WHO, 2024c). As of 2025, there are several types of COVID-19 vaccines that been developed (WHO, 2021):

1. **Inactivated vaccine**

A vaccine that takes the disease-carrying virus or bacterium, or one very similar to it, and inactivate or kill it using chemicals, heat or radiation. This approach uses technology that's been proven to work in people. It has been done to the flu and polio vaccines and vaccines can be manufactured on a reasonable scale. To grow the virus or bacterium safely it requires special laboratory facilities. It can have a relatively long production time, and will likely require two or three doses to be administered.

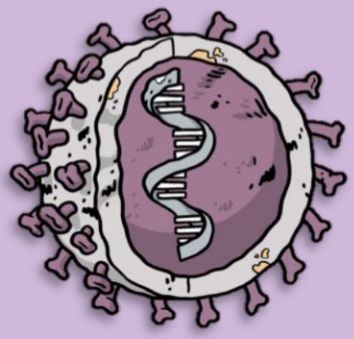


Figure 22. Inactive vaccine
(Source: https://www.who.int/news-room/feature-stories/detail/the-race-for-a-covid-19-vaccine-explained)

2. **Live-attenuated vaccine**

Figure 23. Live-attenuated vaccine
(Source: https://www.who.int/news-room/feature-stories/detail/the-race-for-a-covid-19-vaccine-explained)

Vaccine approach that uses a living but weakened version of the virus or one that's very similar. This approach has been done to the measles, MMR vaccine and the chickenpox and shingles vaccine. It uses similar technology to the inactivated vaccine and can be manufactured at scale. These vaccines may not be suitable for people with compromised immune systems.

3. **Viral vector vaccine**

This vaccine approach uses a safe virus to deliver specific sub-parts (proteins) of the germ of interest, it will trigger an immune response without causing disease. The instructions for making particular parts of the pathogen of interest are inserted into a safe virus. The safe virus then serves as a platform or vector to deliver the protein into the body. The protein triggers the immune response. This type of vaccine is used for The Ebola vaccine, it can be developed rapidly.

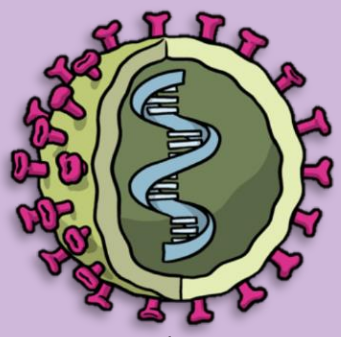


Figure 24. Viral vector vaccine
(Source: https://www.who.int/news-room/feature-stories/detail/the-race-for-a-covid-19-vaccine-explained)

4. The genetic approach (nucleic acid vaccine)

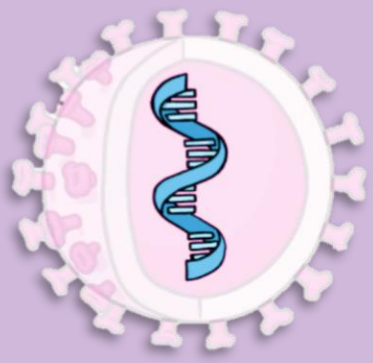


Figure 25. Uses the genetic material for specific proteins - the DNA or RNA
(Source: https://www.who.int/news-room/feature-stories/detail/the-race-for-a-covid-19-vaccine-explained)

A nucleic acid vaccine just uses a section of genetic material that provides the instructions for specific proteins, not the whole microbe. DNA and RNA are the instructions our cells use to make proteins. In our cells, DNA is first turned into messenger RNA, which is then used as the blueprint to make specific proteins. A nucleic acid vaccine delivers a specific set of instructions to our cells, either as DNA or mRNA, for them to make the specific protein that we want our immune system to recognize and respond to. The nucleic acid approach is a new way of developing vaccines. Before the COVID-19 pandemic, none had yet been through the full approvals process for use in humans, though some DNA vaccines, including for particular cancers, were undergoing human trials. Because of the pandemic, research in this area has progressed very fast and some mRNA vaccines for COVID-19 are getting emergency use authorization, which means they can now be given to people beyond using them only in clinical trials.

WHO's SAGE on Immunization issued updated recommendations on COVID-19 vaccination in September 2024. The group reaffirmed the validity of its prior guidance, as follows (WHO, 2024b):

Table 3. COVID-19 Vaccination WHO Advices

Vaccination Status	Population	Recommendation
Never received a COVID-19 vaccine	All adults	1 dose[1]
	Children and adolescents with comorbidities	
	Health workers with direct patient contact	
	Pregnant persons	1 dose
	Any individual who is immunocompromised	2 to 3 doses[2]
Previously **received at least 1 dose** of a COVID-19 vaccine	Adults over 75 or 80 years old3	**Revaccination** 6 to 12 months after the most recent dose
	Adults over 50 or 60 years old3 with comorbidities	
	Any individual who is immunocompromised	
	Adults over 50 or 60 years old3	**Revaccination** 12 months after the most recent dose
	Adults with comorbidities	
	Health workers with direct patient contact	
	Pregnant persons	Single dose in each pregnancy
	Health adults	Revaccination not routinely recommended
	Children and adolescents	
Legend:		
High priority-use groups	Sub-populations with special considerations	
[1] 2 doses required for inactivated vaccines [2] In consultation with a health worker [3] Age cut-off depending on countries		

COVID-19 vaccines may cause mild to moderate side effects like fever, tiredness, headache, muscle aches, chills, diarrhea, and pain at the injection site. Most go away within a few days, and can be managed with rest, non-alcoholic liquids, and medication. More serious or long-lasting side effects are possible but extremely rare. National health authorities monitor vaccines to detect and respond to rare adverse events. At the regional and global level, WHO also supports countries in monitoring vaccine safety (WHO, 2024c). Individuals with a history of severe allergic reactions or anaphylaxis to any component of the COVID-19 vaccine are advised not to get vaccinated. Vaccination should also be postponed for those with a fever over 38.5ºC until full recovery. Individuals are urged to inform vaccination staff if they are taking blood thinners (WHO, 2024b).

Control Measures Strategy

Control Measures

The core actions, activities, and strategic approaches described in this document are organized in alignment with the WHO's 5Cs framework and the SPRP pillars. These elements are structured as follows (WHO, 2023c):

1. National Action Plan: Key Prioritized Activities Based on the Current Epidemiological Context of SARS-CoV-2
   a. Transition from emergency response to longer term COVID-19 disease management.
   b. Integrate activities into routine systems.
   c. Strengthen global health security.
2. Special Considerations for Fragile, Conflict-Affected, and Vulnerable (including humanitarian Settings
3. WHO Global and Regional Support to Member States to implement their national action plans
4. Key guidance documents for reference

The strategic actions are organized within the core components of WHO's Strengthening global architecture for health emergency preparedness, response, and resilience framework. The five core components as presented in Table 4 (WHO, 2023c).

Table 4. Alignment of the 2020–2022 SPRP pillars of the COVID-19 response with the 5 core components of the global health architecture

Core component	Pillars of the COVID-19 SPRP operational planning guidelines
Coordination	**Pillar 1.** Coordination, planning, financing, and monitoring
Collaborative surveillance	**Pillar 3.** Surveillance, epidemiological investigation, contact tracing, and adjustment of public health and social measures
	Pillar 5. Laboratories and diagnostics
Community protection	**Pillar 2.** Risk communication, community engagement (RCCE), and infodemic management
	Pillar 4. Points of entry, international travel and transport, mass gatherings and population movement
	Pillar 10. Vaccines research, policy, and strategy
Safe and scalable care	**Pillar 6.** Infection prevention and control, and protection of the health workforce
	Pillar 7. Case management, clinical operations, and therapeutics
	Pillar 9. Strengthening essential health services and systems
Countermeasures and research	**Pillar 8.** Operational support and logistics, and supply chains
	Pillar 10. Vaccines research, policy, and strategy

Following the WHO's declaration of COVID-19 as a global pandemic on 11 March 2020, ASEAN strengthened regional cooperation and supported national response efforts across all ten Member States (ASEAN, 2020). Countries quickly implemented containment and mitigation strategies, including preparedness, surveillance, detection, and response measures. To address data and operational gaps, the ASEAN Health Sector mobilized regional mechanisms to complement national actions and facilitate timely exchanges of information, technical expertise, and best practices. To enhance visibility and public awareness, the ASEAN Secretariat launched a dedicated webpage showcasing ongoing health initiatives in COVID-19 prevention, detection, and response.

Control Measures in ASEAN Member States

Brunei Darussalam

Brunei Darussalam implemented a comprehensive strategy to manage the COVID-19 pandemic, focusing on containment measures, vaccination, and digital health tools (WHO, 2025c). The initial response involved aggressive contact tracing, RT-PCR testing, border controls, and temporary closures of religious, educational, and commercial institutions. The government launched the BruHealth mobile application for digital contact tracing and QR code check-ins at public premises. Vaccination was a key focus, with the rollout beginning in 2021 and achieving over 70% coverage within a year. The program expanded to include adolescents aged 12 to 17 years and introduced booster doses for priority groups. Testing strategies evolved to incorporate ART alongside RT-PCR, and digital quarantine orders and home recovery monitoring systems were introduced to manage asymptomatic or mild cases effectively.

The National COVID-19 Recovery Framework is a comprehensive strategy for managing the pandemic and transitioning towards endemicity (Prime Minister's Office Brunei, 2025). It consists of four phases: Containment, Preparation, Transition, and Endemic. Each phase aims to minimize transmission, prevent healthcare system overload, and reduce morbidity and mortality. Key components include the national vaccination program, enhanced testing protocols, home recovery monitoring, and digital tools. Public health and social measures are sustained throughout. The Transition and Endemic phases emphasize the gradual reopening of society and normalization of COVID-19 management, balancing public health safety with socio-economic activities.

Cambodia

Cambodia's COVID-19 response strategy was based on early preparedness, multisectoral coordination, and resource mobilization, guided by the APSED III and Public Health Emergencies and the International Health Regulations (2005) (WHO, 2024d). The government launched a Master Plan for COVID-19, establishing a whole-of-government and whole-of-society approach, with the Ministry of Health as the technical lead. The WHO supported the response through an incident management system, staff repurposing, and aligning global guidance to Cambodia's national context. Surveillance and laboratory systems were expanded, with over 3000 trained rapid response team members deployed, a national hotline for event-based surveillance, and increased molecular testing capacity. The COVID-19 vaccination programme achieved WHO's target of 70% population coverage eight months ahead of schedule.

The Cambodian government carried a stronger strategy for risk communication and community engagement, including the "3 Dos and 3 Don'ts" campaign and outreach to marginalized communities (WHO, 2024d). This public health strategy combined risk-based decision-making with cultural understanding, promoting community compliance. The government collaborated with Buddhist monks and local leaders to promote preventive behaviours during religious events. Essential health services were prioritized, including intensive care and home-based recovery. Coordination and preparedness were strengthened across all 25 provinces. In 2021, the government transitioned to a longer-term strategy, the "National Strategy for Living in the New Normal," emphasizing sustainable pandemic management. Lessons from the COVID-19 response are now incorporated into Cambodia's updated National Action Plan for Health Security.

Indonesia

In response to the ongoing challenges of the COVID-19 pandemic, the Government of Indonesia, through the Minister of Health Regulation No. 23 of 2023, has outlined a series of strategic actions to strengthen the national response (Ministry of Health Indonesia, 2023):

1. Intensification of response activities, which encompass health promotion, disease surveillance, immunization, clinical case management, and medical waste management.
2. Strengthening the institutional commitment among relevant ministries and government agencies at the national, provincial,

and district/city levels to ensure coordinated and sustained action.

3. Expansion and improvement of public access to essential COVID-19 prevention, testing, treatment, and vaccination services.
4. Enhancement and development of multi-sectoral partners, engaging the private sector, civil society organizations, community groups, and other key stakeholders to support and sustain response efforts.
5. Promotion research, development, and innovation, aimed at advancing knowledge, improving intervention strategies, and supporting evidence-based decision-making.
6. Reinforcement of supervision and oversight mechanisms through a comprehensive of monitoring, evaluation, and follow-up actions to ensure accountability and the continuous strengthening of the response system.

These strategies are designed to provide a comprehensive and adaptive framework for managing COVID-19, aligned with national priorities and global public health standards.

Lao People's Democratic Republic

Lao PDR is implementing a Resilience Framework 2022-2025 to strengthen its resilience against future crises (Ministry of Planning and Investment, 2022). The framework, developed through a consultative process led by the Ministry of Planning and Investment, prioritizes actions under the National Socio-Economic Development Plan (NSEDP) and related frameworks. One of the core strategies is focusing on human capital, including health and education.

The National COVID-19 Strategic Preparedness and Response Plan for the Health Sector 2020-2025 is a central component, addressing critical areas of preparedness and service delivery. Key interventions include an integrated screening system, timely referrals, and redesign of essential health service delivery. The plan also emphasizes strengthening surveillance, case management, risk communication, and infection prevention and control. These coordinated strategies reflect Lao PDR's commitment to a whole-of-government and whole-of-society approach in addressing COVID-19 and building long-term resilience against future public health emergencies (Ministry of Planning and Investment, 2022).

Malaysia

COVID-19 continues to evolve with potential future increases in morbidity and mortality despite current declines due to widespread immunity. In response, the Ministry of Health Malaysia developed guidance for managing COVID-19 in healthcare settings (Ministry of Health Malaysia, 2024a). As the pandemic transitions into an endemic phase, it is essential to maintain effective management strategies, particularly within healthcare settings, to prevent and control transmission.

To address potential future surges in COVID-19 cases, five key strategies have been identified (Ministry of Health Malaysia, 2024b):

1. Early detection of COVID-19 cases and emerging SARS-CoV-2 variants;
2. Community empowered through the TRIIS framework (Test, Report, Isolate, Inform, and Seek);
3. Focused management and control of cases to protect vulnerable high-risk populations;
4. Enhancement of healthcare capacity in hospitals, clinics, and laboratories; and
5. Reinforcement of public health and social measures (PHSM).

This updated guidance is grounded in the latest evidence and is applicable across all healthcare disciplines.

Myanmar

As of the current period, Myanmar is transitioning from the epidemic phase of COVID-19 to an endemic stage (Ministry of Health Myanmar, 2025). The current declining trend aligns with global observations, as many countries are now integrating COVID-19 monitoring into their routine respiratory disease surveillance systems. The Ministry of Health (MoH) continues to emphasize the unpredictable nature of SARS-CoV-2 due to its frequent genetic mutations and the periodic emergence of new variants that have triggered resurgences elsewhere. Vaccination is prioritized as the foundation of its COVID-19 prevention and control strategy. Mass vaccination campaigns have been carried out in coordination with relevant stakeholders and the general public. To address evolving variants, the MoH has adopted updated vaccine formulations, including the Pfizer XBB 1.5 vaccine and, starting in May, the Pfizer JN.1 vaccine through support from the GAVI C19 Vaccination Program. These updated vaccines target Omicron-lineage variants and are designed to offer enhanced protection against current and future mutations (Ministry of Health Myanmar, 2025).

The MoH continues to encourage all populations to stay up to date with their vaccinations, particularly high-risk groups such as the elderly, individuals with chronic illnesses or weakened immune systems, healthcare workers, and pregnant women (Ministry of Health Myanmar, 2025). In addition to vaccination, the Ministry reinforces personal protective measures including regular handwashing, proper mask-wearing, respiratory hygiene, and avoiding crowded or poorly ventilated spaces.

Philippines

The NAP-COVID-19 outlines the national strategy and broad guidelines to contain and prevent the spread and eliminate the threat of COVID-19 (National Disaster Risk Reduction and Management Council, 2021). The first phase of the NAP which was implemented from March to June 2020 was primarily focused on the prevention, containment, and elimination of COVID-19 while mitigating the social, economic, and security impacts of the pandemic. Meanwhile the second phase of the NAP which ran from July to September 2020 brought further refinements to the strategy by adopting measures to keep the COVID-19 fatalities low while also enacting measures to foster the economic recovery of the country. As the NAP-COVID-19 enters the third phase, the focus shifts from risk aversion to risk management as it sustains the gains from the previous phases while providing an equilibrium both on health safety and economic recovery.

The specific objectives of the NAP-COVID-19 Phase III are (National Disaster Risk Reduction and Management Council, 2021):

1. Reduce the number of cases and the rate of transmission
2. Improve the healthcare system capacity
3. Implement the National COVID-19 Immunization Roadmap
4. Provide safe and sufficient transportation to the public
5. Reduce underemployment and unemployment rates
6. Ensure business and service continuity
7. Mitigate the impact of socio-economic contraction

Singapore

Singapore has officially exited the acute phase of the COVID-19 pandemic, citing stable infection trends, high vaccination coverage, and a global decline in cases (Ministry of Health Singapore, 2023). The Ministry of Health has discontinued key emergency measures, data collection, relaxed mask mandates, and eliminated pre-departure testing for travellers. The multi-ministry task force has been

restructured, with the MOH taking on ongoing COVID-19 management. Financial support for treatment and testing has been revised to standard healthcare financing frameworks, while vaccination and antivirals remain fully subsidized for vulnerable groups. Oversight of vaccination policy will transition from the Expert Committee on COVID-19 Vaccination to the standing Expert Committee on Immunisation by end-March 2024 (Ministry of Health Singapore, 2024). Four Joint Testing and Vaccination Centres will close, consolidating vaccination services into five remaining centres and over 200 Public Health Preparedness Clinics and polyclinics. COVID-19 data is now reported alongside other infectious diseases in the Ministry of Health's Weekly Infectious Diseases Bulletin. These changes mark a strategic shift from emergency management to endemic control, reflecting Singapore's efforts to embed COVID-19 response mechanisms into sustainable long-term public health infrastructure.

Thailand

Thailand's preparedness for influenza and respiratory disease pandemics is guided by the Emerging Infectious Disease Strategic Plan (2023–2027), which prioritizes respiratory threats due to their pandemic potential (Ministry of Public Health Thailand, 2022). In anticipation of future outbreaks, particularly those caused by influenza or other respiratory pathogens, Thailand has developed the Action Plan for Preparedness for Influenza and Respiratory Diseases (2025–2027) (Ministry of Public Health Thailand, 2024). To operationalize this focus, the Action Plan for Preparedness for Influenza and Respiratory Diseases (2025–2027) was developed to coordinate national efforts across sectors. The plan aims to reduce illness, death, and complications, while minimizing broader social, economic, and environmental impacts. Its goal is to ensure Thailand's systematic and effective readiness to prevent and respond to pandemics caused by influenza and other respiratory infectious diseases. Thailand has established 4 strategic issues to promote integration between all relevant sectors as follows (Ministry of Public Health Thailand, 2024):

1. Strengthening the society, communities and cooperation networks in all sectors, both domestically and internationally, for national security.
2. Development of a preparedness system for influenza and respiratory tract infections pandemics.
3. Development of a surveillance system, disease investigation, prevention, control, diagnosis and treatment of influenza and respiratory tract infectious diseases outbreaks.

4. Development of the potential of the medical system, vaccines, drugs, diagnostic test kits in the country, and logistics systems

Viet Nam

Vietnam's COVID-19 Control and Management Plan for 2023–2025 outlines a comprehensive, sustainable strategy following the reclassification of COVID-19 from a Group A to a Group B infectious disease in October 2023 (Ministry of Health Viet Nam, 2023). Despite this shift, the virus is still recognized as a serious public health threat requiring long-term control. The plan is built on nine key pillars:

1. Maintaining governance through updated regulations and active local response mechanisms;
2. Integrating COVID-19 into routine influenza-like illness (ILI) and severe acute respiratory infection (SARI) surveillance systems, along with enhanced genomic monitoring of variants;
3. Ensuring healthcare readiness by strengthening hospital capacity, infection control, and community-level care for high-risk groups;
4. Embedding COVID-19 vaccination into national immunization schedules and continuing booster campaigns for vulnerable populations;
5. Enforcing stringent infection prevention and control (IPC) practices in healthcare settings;
6. Enhancing risk communication and community engagement through targeted public education;
7. Building health workforce capacity with continuous training on diagnostics, critical care, and outbreak response;
8. Securing logistics and health information systems to maintain sufficient supplies of medical equipment, medicines, and oxygen; and
9. Fostering the international collaboration for research, data sharing, and preparedness.

The objective of the plan is to integrate COVID-19 into Vietnam's regular healthcare framework while maintaining flexibility to respond to future resurgences or emerging variants, in alignment with regional and global health security efforts.

References

ASEAN (2020) A shared identity, ASEAN. Available at: https://asean.org/wp-content/uploads/2017/09/The-ASEAN-Magazine-Issue-1-May-2020.pdf (Accessed: 26 June 2025).

ASEAN Biological Threats Surveillance Centre. (n.d). ABVC Dashboard – Morbidity and Mortality Weekly Report [Dashboard], ASEAN Biological Threats Surveillance Centre. Available at: https://abvc.asean-phe.org. (Accessed: 26 June 2025).

Azmat, M. A., R. Rasheed, S. Arshad, M. Shaban, & A. Kanwal, Trans. (2023) COVID-19: A deadly outbreak on planet earth, Journal of Agriculture and Biology, 1(1), 29-45. https://doi.org/10.55627/agribiol.001.01.0643

GISAID. (n.d). hCoV-19 Variants Dashboard, GISAID. Available at: https://gisaid.org/hcov-19-variants-dashboard/. (Accessed: 26 June 2025).

Liu, C., Zhou, D., Dijokaite-Guraliuc, A., Supasa, P., Duyvesteyn, H. M. E., Ginn, H. M., Selvaraj, M., Mentzer, A. J., Das, R., de Silva, T. I., Ritter, T. G., Plowright, M., Newman, T. A. H., Stafford, L., Kronsteiner, B., Temperton, N., Lui, Y., Fellermeyer, M., Goulder, P., Klenerman, P., ... Screaton, G. R. (2024). A structure-function analysis shows SARS-CoV-2 BA.2.86 balances antibody escape and ACE2 affinity. Cell reports. Medicine, 5(5), 101553. https://doi.org/10.1016/j.xcrm.2024.101553

Liu, C., Tsang, T.K., Sullivan, S.G. et al. (2025). Comparative duration of neutralizing responses and protections of COVID-19 vaccination and correlates of protection. Nat Commun16, 4748. https://doi.org/10.1038/s41467-025-60024-9

Ministry of Planning and Investment (2022) Lao PDR Resilience Framework 2022-2025, Ministry of Planning and Investment. Available at: https://rtm.org.la/wp-content/uploads/2023/01/Resilence-Framework-Final-version-Eng_231222.pdf (Accessed: 26 June 2025).

Ministry of Public Health Thailand (2022) แผนงานป้องกันควบคุมโรคอุบัติใหม่ และเวชศาสตร์เขตเมือง 5 ปี (พ.ศ. 2566 – 2570) และ แผนปฏิบัติราชการประจ าปีงบประมาณ พ.ศ.Available at: https://ddc.moph.go.th/uploads/publish/1353420221129072001.pdf (Accessed: 26 June 2025).

Ministry of Health Indonesia (2023) Peraturan Menteri Kesehatan Nomor 23 Tahun 2023 tentang Pedoman Penanggulangan Corona Virus Disease 2019 (Covid-19), Peraturan Menteri Kesehatan. Available at: https://peraturan.bpk.go.id/Details/275531/permenkes-no-23-tahun-2023 (Accessed: 26 June 2025).

Ministry of Health Singapore (2023). Singapore to Exit Acute Phase of Pandemic, Ministry of Health Singapore. Available at: https://www.moh.gov.sg/newsroom/singapore-to-exit-acute-phase-of-pandemic. (Accessed: 26 June 2025).

Ministry of Health Viet Nam (2023). Kế hoạch Kiểm soát, quản lý bền vững dịch bệnh COVID-19 giai đoạn 2023-2025, Ministry of Health (MOH) Electronic Information Portal. Available at: https://moh.gov.vn/tin-tong-hop/-/asset_publisher/k206Q9qkZOqn/content/ke-hoach-kiem-soat-quan-ly-ben-vung-dich-benh-covid-19-giai-oan-2023-2025. (Accessed: 26 June 2025).

Ministry of Health Malaysia. (2024a). Guidance on COVID-19 Management in The Healthcare Setting, Ministry of Health Malaysia. Available at: https://covid-19.moh.gov.my/garis-panduan/garis-panduan-kkm/Guidance-on-COVID-19-for%20Health-Care-Setting.pdf. (Accessed: 26 June 2025).

Ministry of Health Malaysia. (2024b). Garis Panduan Pengurusan COVID-19, Ministry of Health Malaysia. Available at: https://covid-19.moh.gov.my/garis-panduan/garis-panduan-kkm/Garis-Panduan-Hidup-Bersama-COVID-19-15072024.pdf. (Accessed: 26 June 2025).

Ministry of Health Singapore. (2024). Integrating our COVID-19 response protocols into our broader public health programmes, Ministry of Health Singapore. Available at: https://www.moh.gov.sg/newsroom/integrating-our-covid-19-response-protocols-into-our-broader-public-health-programmes. (Accessed: 26 June 2025).

Ministry of Public Health Thailand. (2024). แผนปฏิบัติการด้านการเตรียมความพร้อมรับการระบาดใหญ่ของโรคไข้หวัดใหญ่และโรคติดต่อระบบทางเดินหายใจ ปี พ.ศ. 2567 - 2570. Available at: https://ddc.moph.go.th/uploads/publish/1597920240814071904.pdf. (Accessed: 26 June 2025).

Ministry of Health Myanmar. (2025). ကိုဗစ်-၁၉ ဗိုင်းရပ်စ်ပိုးနှင့် အတူ ယှဉ်တွဲနေထိုင်ကြရာဝယ်, The Republic of The Union of Myanmar Ministry of Health. Available at: https://www.moh.gov.mm/page/21168. (Accessed: 26 June 2025).

National Disaster Risk Reduction and Management Council (2021). National Action Plan Against COVID-19 Phase III, National Task Force Against COVID-19. Available at: https://ndrrmc.gov.ph/attachments/article/4148/National-Action-Plan-against-COVID19-Phase-III.pdf. (Accessed: 26 June 2025).

Planas, D., Staropoli, I., Michel, V., Lemoine, F., Donati, F., Prot, M., Porrot, F., Guivel-Benhassine, F., Jeyarajah, B., Brisebarre, A., Dehan, O., Avon, L., Bolland, W. H., Hubert, M., Buchrieser, J., Vanhoucke, T., Rosenbaum, P., Veyer, D., Péré, H., Lina, B., ...

Schwartz, O. (2024). Distinct evolution of SARS-CoV-2 Omicron XBB and BA.2.86/JN.1 lineages combining increased fitness and antibody evasion. Nature communications, 15(1), 2254. https://doi.org/10.1038/s41467-024-46490-7

Prime Minister's Office Brunei. (2025). National COVID-19 Recovery Framework, Prime Minister's Office Brunei. Available at: https://www.pmo.gov.bn/SiteCollectionDocuments/covid19/National-COVID-19-Recovery-Framework.pdf. (Accessed: 26 June 2025).

WHO. (2020a). Pneumonia of unknown cause – China, World Health Organization. Available at: https://www.who.int/emergencies/disease-outbreak-news/item/2020-DON229. (Accessed: 26 June 2025).

WHO. (2020b). COVID-19 - China, World Health Organization. Available at: https://www.who.int/emergencies/disease-outbreak-news/item/2020-DON233. (Accessed: 26 June 2025).

WHO. (2020c). Novel Coronavirus – Thailand (ex-China), World Health Organiza. Available at: https://www.who.int/emergencies/disease-outbreak-news/item/2020-DON234. (Accessed: 26 June 2025).

WHO. (2020d). Novel Coronavirus(2019-nCoV) Situation Report - 11, World Health Organization. Available at: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200131-sitrep-11-ncov.pdf?sfvrsn=de7c0f7_4. (Accessed: 26 June 2025).

WHO. (2020e). WHO Director-General's remarks at the media briefing on 2019-nCoV on 11 February 2020, World Health Organization. Available at: https://www.who.int/director-general/speeches/detail/who-director-general-s-remarks-at-the-media-briefing-on-2019-ncov-on-11-february-2020. (Accessed: 26 June 2025).

WHO. (2020f). WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020, World Health Organization. Available at: https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020. (Accessed: 26 June 2025).

WHO. (2020g). Coronavirus disease (COVID-19): Risks and safety for older people, World Health Organization. Available at: https://www.who.int/news-room/questions-and-answers/item/coronavirus-disease-covid-19-risks-and-safety-for-older-people. (Accessed: 26 June 2025).

WHO. (2020h). COVID-19 and NCD risk factors, World Health Organization. Available at: https://www.who.int/docs/default-source/ncds/un-interagency-task-force-on-ncds/uniatf-policy-brief-ncds-and-covid-030920-poster.pdf. (Accessed: 26 June 2025).

WHO. (2020i). Diagnostic testing for SARS-CoV-2, World Health Organization. Available at: https://iris.who.int/bitstream/handle/10665/334254/WHO-2019-nCoV-laboratory-2020.6-eng.pdf. (Accessed: 26 June 2025).

WHO. (2021). The different types of COVID-19 vaccines, World Health Organization. Available at: https://www.who.int/news-room/feature-stories/detail/the-race-for-a-covid-19-vaccine-explained. (Accessed: 26 June 2025).

WHO. (2022). WHO COVID-19: case definitions: updated in Public health surveillance for COVID-19, 22 July 2022, World Health Organization. Available at: https://www.who.int/publications/i/item/WHO-2019-nCoV-Surveillance_Case_Definition-2022-1. (Accessed: 26 June 2025).

WHO. (2023a). Clinical management of COVID-19: Living guideline, World Health Organization. Available at: https://www.who.int/publications/i/item/WHO-2019-nCoV-clinical-2023.2. (Accessed: 26 June 2025).

WHO. (2023b). Coronavirus disease (COVID-19), World Health Organization. Available at: https://www.who.int/news-room/fact-sheets/detail/coronavirus-disease-(covid-19). (Accessed: 26 June 2025).

WHO. (2023c). From emergency response to long-term COVID-19 disease management: Ending the COVID-19 emergency and transitioning from emergency phase to longer-term disease management: Guidance on calibrating the response, World Health Organization. Available at: https://iris.who.int/bitstream/handle/10665/372712/WHO-WHE-SPP-2023.2-eng.pdf?sequence=1. (Accessed: 26 June 2025).

WHO. (2024a). WHO Coronavirus Network (CoViNet), WHO COVID-19 dashboard. Available at: https://data.who.int/dashboards/covid19/variants. (Accessed: 26 June 2025).

WHO. (2024b). COVID-19 advice for the public: Getting vaccinated, World Health Organization. Available at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/covid-19-vaccines/advice. (Accessed: 26 June 2025).

WHO. (2024c). Coronavirus disease (COVID-19): Vaccines and vaccine safety, World Health Organization. Available at: https://www.who.int/news-room/questions-and-answers/item/coronavirus-disease-(covid-19)-vaccines. (Accessed: 26 June 2025).

WHO. (2024d). Preparing and responding to the COVID-19 pandemic in Cambodia: WHO Support January 2020 - July 2023, World Health Organization. Available at:

https://iris.who.int/bitstream/handle/10665/379243/9789290620443-eng.pdf?sequence=1. (Accessed: 26 June 2025).

WHO. (2025a). COVID-19 Cases, World, WHO COVID-19 dashboard. Available at: https://data.who.int/dashboards/covid19/cases?n=c. (Accessed: 26 June 2025).

WHO. (2025b). COVID-19 - Global Situation, World Health Organization. Available at: https://www.who.int/emergencies/disease-outbreak-news/item/2025-DON572. (Accessed: 26 June 2025).

WHO. (2025c). COVID-19 in Brunei Darussalam, World Health Organization. Available at: https://www.who.int/brunei/emergencies/covid-19-in-brunei. (Accessed: 26 June 2025).

WHO. (n.d). Transmission package: Protect yourself and others from COVID-19, World Health Organization. Available at: https://www.who.int/teams/risk-communication/covid-19-transmission-package. (Accessed: 26 June 2025).

WHO. (n.d). Coronavirus disease (COVID-19) pandemic, World Health Organization. Available at: https://www.who.int/europe/emergencies/situations/covid-19. (Accessed: 26 June 2025).

WHO. (n.d). COVID-19 Coronavirus Symptoms, World Health Organization. Available at: https://www.who.int/images/default-source/searo---images/countries/indonesia/infographics/covid19_symptoms.jpg?sfvrsn=b599a602_5. (Accessed: 26 June 2025).

WHO. (n.d). How to Protect Yourself from COVID-19, World Health Organization. Available at: https://cdn.who.int/media/images/default-source/health-topics/coronavirus/myth-busters/infographic-covid-19-transmission-and-protections-final2.jpg?sfvrsn=7fc5264a_2. (Accessed: 26 June 2025).

ASEAN BIOLOGICAL THREATS SURVEILLANCE CENTRE

Report generated by
ASEAN Biological Threats Surveillance Centre (ABVC) in collaboration with Bluedot Inc.
Email: supportebiodiaspora.org
Facebook: abvc.official
Instagram: abvc.official