

COVID-19, Mpox, and Other Infectious Diseases

Situational Report in the ASEAN Region

— ASEAN BioDiaspora Virtual Center (ABVC)



ASSOCIATION
OF SOUTHEAST
ASIAN NATIONS



ASEAN
BIODIASPORA
VIRTUAL CENTER



MINISTRY OF HEALTH
REPUBLIC OF INDONESIA

GLOBAL PARTNERS



In partnership with
Canada



**World Health
Organization**



Korea Disease Control and
Prevention Agency



Table of Contents

COVID-19	1
Highlights and Situation Overview	1
Global Update	1
Research Update	1
Travel Update	1
Cases and Deaths Table	3
COVID-19 Cases in ASEAN Region Table	3
Epi curve Among ASEAN Countries	4
ASEAN Weekly New Cases and New Deaths	5
Vaccination Status in ASEAN	6
Infectious Diseases	7
Infectious Diseases Map in ASEAN Region and Neighboring Countries	7
Infectious Diseases Other than COVID-19, Mpox, and Dengue	8
Infectious Disease Global Updates	8
Lassa Fever	8
Infectious Disease in ASEAN and Neighboring Countries Updates	8
Pertussis	8
Leptospirosis	9
Scrub typhus	9
Enterovirus	10
Dengue	11
Dengue Cases in ASEAN Region Map	11
Dengue Cases in ASEAN Region Table	11
Measles	12
Measles Cases in ASEAN Region Map	12
Measles Cases in ASEAN Region Table	12
Mpox	13
Mpox Cases Globally Map	13
Mpox Daily Trend Globally	14
Highlights and Situation Overview	15
Mpox Cases in ASEAN Region Table	15
Mpox Cases in Asia-Pacific Region Table	15
Top 5 Countries with Most Mpox Cases Globally	15
Mpox Cases per Region	16
Global Update	16
References	17



COVID-19: Highlights and Situation Overview

Global Update

- **Worldwide**, over 687 million cases and over 6 million deaths have been attributed to COVID-19.
- The **World Health Organization (WHO)** has been tracking health system impacts since the early days of the pandemic and its latest survey shows that health services are starting to recover.⁷ The signs of health service recovery came from the fourth round of WHO surveys designed to gauge how the pandemic was affecting the delivery of essential health services.⁷ Disruptions continue in nearly 23% of services, down from 56% in the summer of 2020.⁷ The WHO said disruptions continue in both the demand and supply part of health services, which reflect lower levels of health-seeking from the public and limited availability of health workers and other resources such as clinics, medicines, and products.⁷ By the end of 2022, most countries reported partial signs of recovery across a broad range of services, from maternal and child health to care for older people, spanning both communicable and non-communicable diseases.⁷ The number of countries reporting supply chain disruptions over the past year dropped from half to one quarter.⁷ However, some disruptions persist in all regions, across all income levels, affecting most delivery systems.⁷ The WHO also warned that countries are grappling with increasing service backlogs, such as screening and diagnosis of noncommunicable diseases, which can have negative consequences due to care delays.⁷ WHO also added that 80% to 90% of countries have integrated COVID-19 services into their routine health delivery systems, though most report some bottlenecks in areas such as vaccination and diagnostics, with healthcare workforce and lack of funding as the main barriers.⁷ [[Full article](#)]
- The **European Centre for Disease Prevention and Control (ECDC)** detailed lessons learned during the pandemic response, the result of a 2-year effort that included expert consultations, after-action reviews, and discussions with country health officials. In its May 2023 report released on May 2 (Tuesday), it details its findings, which fall into four main areas: public health workforce investments, preparing for the next health crisis, risk communication, and data collection and analysis. One overarching theme was the need for a strong public health workforce that is trained to use new systems and methods, which the ECDC said is vital for implementing all the other lessons learned. During the fact-finding part of the analysis, countries reported challenges retaining staff that were hired on an emergency basis, compounded by a lack of funding even before the pandemic. They also acknowledged burnout in public health staff and the need to recover to prepare for the next health emergency. Furthermore, ECDC recognized that countries struggled with communicable disease legislation during the pandemic, and the ECDC suggested a need for updates that support emergency planning while also considering human rights and data protection. Among the many data-related issues, the group said the results found a need to step-up capacity for laboratory testing and genomic surveillance. [[Full report](#)]

Research Update (Published and peer-reviewed studies)

- The study **NVX-CoV2373 vaccine efficacy against hospitalization: A post hoc analysis of the PREVENT-19 phase 3, randomized, placebo-controlled trial** estimates that two doses of the Novavax (NVX-CoV2373) COVID-19 vaccine were 100% effective against hospitalization.⁸ From January 25 to April 30, 2021, four hospitalizations occurred among 77 events in the per-protocol efficacy population (17,312 Novavax recipients with confirmed polymerase chain reaction, 8,140 controls).⁸ The hospitalizations were all among placebo recipients, for a post hoc vaccine effectiveness (VE) of 100% wherein



one case was moderate, and three were severe.⁸ In a post hoc analysis of an expanded efficacy population, which included COVID-19 hospitalizations without a requirement for PCR testing, 12 hospitalizations occurred, all among placebo recipients, for a VE against hospitalization of 100%.⁸ Three infections were moderate, and eight were severe, including one death.⁸ According to the researchers, hospitalized patients had a high prevalence of chronic conditions, such as obesity (BMI of 30 or more), high blood pressure, and diabetes.⁸ They added that the results of the study suggest that the vaccine is effective in reducing the risk of hospitalization due to COVID-19, especially in populations with pre-existing comorbid conditions and higher BMIs.⁸ [\[Full text\]](#)

Travel Update

- **USA:** The United States government announced the end of vaccination requirements for federal workers, international travelers, and international air travelers on May 11, when the COVID-19 public health emergency ends.⁹ Officials also announced the Department of Health and Human Services will start winding down the vaccine requirement for Head Start teachers, health facilities certified by the Centers for Medicare and Medicaid Services, and certain noncitizens at land borders.⁹ In a statement, the White House said the vaccine requirement protected critical workforces and the populations they served and helped slow the spread of the virus to allow health systems more time to manage its increased burden.⁹ [\[Full article\]](#)



Cases and Deaths as of 03 May 2023

- As of 03 May 2023 (1PM, GMT+7), worldwide, there were **687,342,942** confirmed cases, including **6,867,670** deaths. Globally, Case Fatality Rate (CFR) was **1.0%**.
- 35,858,196 confirmed cases** of COVID-19 have been reported in the **ASEAN Region**.
- The Case Fatality Rate in the **ASEAN Region** is range between **0.1 to 3.1%**

COVID-19 cases in ASEAN region

REGION	COUNTRY	FIRST CONFIRMED CASE(S)	LATEST REPORT ON CONFIRMED CASE(S)	TOTAL CONFIRMED CASES	NEW CASES	TOTAL DEATHS	NEW DEATHS	CUMULATIVE CASES/ 100,000	CUMULATIVE VACCINATED	CUMULATIVE FULLY VACCINATED	CUMULATIVE BOOSTERED	FULLY VACCINATED/ 100
ASEAN REGION	Brunei Darussalam	10 Mar 20	18-Apr-23	285,740	-	225	-	64,053	450,404	445,929	338,987	99.3
	Cambodia	27 Jan 20	29-Apr-23	138,733	-	3,056	-	841	15,244,858	14,609,937	10,433,215	87.1
	Indonesia	02 Mar 20	03-May-23	6,777,674	690	161,333	6	2,490	203,657,535	172,693,321	67,952,274	62.7
	Lao PDR	24 Mar 20	29-Apr-23	218,077	-	758	-	3,041	5,888,649	5,222,417		69.4
	Malaysia	25 Jan 20	30-Apr-23	5,071,840	-	37,020	-	15,788	28,125,245	27,536,657	17,056,957	81.1
	Myanmar	23 Mar 20	02-May-23	635,102	-	19,492	-	1,173	34,777,314	27,545,329	2,227,351	50.8
	Philippines	30 Jan 20	02-May-23	4,095,468	-	66,444	-	3,771	78,369,243	73,937,435	21,341,197	64.0
	Singapore	23 Jan 20	21-Apr-23	2,340,779	-	1,727	-	39,049	5,161,990	5,120,768	4,440,289	90.8
	Thailand	13 Jan 20	01-May-23	4,730,490	-	33,947	-	6,791	57,005,497	53,486,086	32,143,431	74.6
	Vietnam	23 Jan 20	02-May-23	11,564,293	-	43,195	-	11,950	90,450,881	85,848,363	57,452,750	87.4
ASEAN COUNTRIES				35,858,196	690	367,197	6	148,946	519,131,616	466,446,242	213,386,451	

*There have been no tests reported in the last 14 days in the **ASEAN** Region.

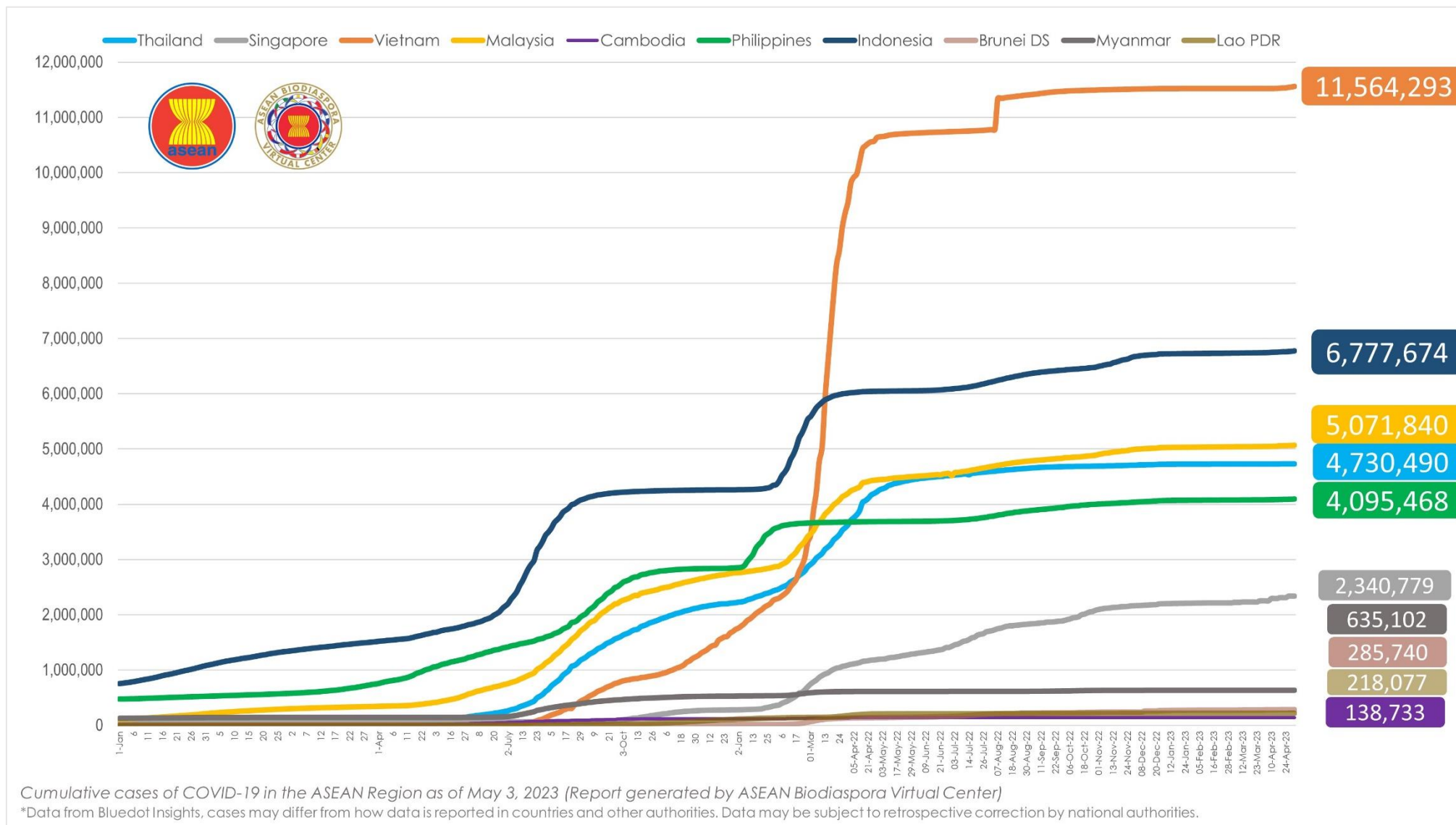
REGION	TOTAL CONFIRMED CASES	NEW CASES	TOTAL DEATHS	NEW DEATHS
ASIA	194,964,205	20,287	1,204,716	69
AFRICA	12,818,934		258,730	
AMERICAS	194,834,045		2,983,920	-
EUROPE	248,867,562		2,053,107	-
TOTAL	651,484,746	20,287	6,500,473	69

**Data Reference: [Worldometer](https://www.worldometer.com/)



COVID-19 Epi curve among ASEAN Countries:

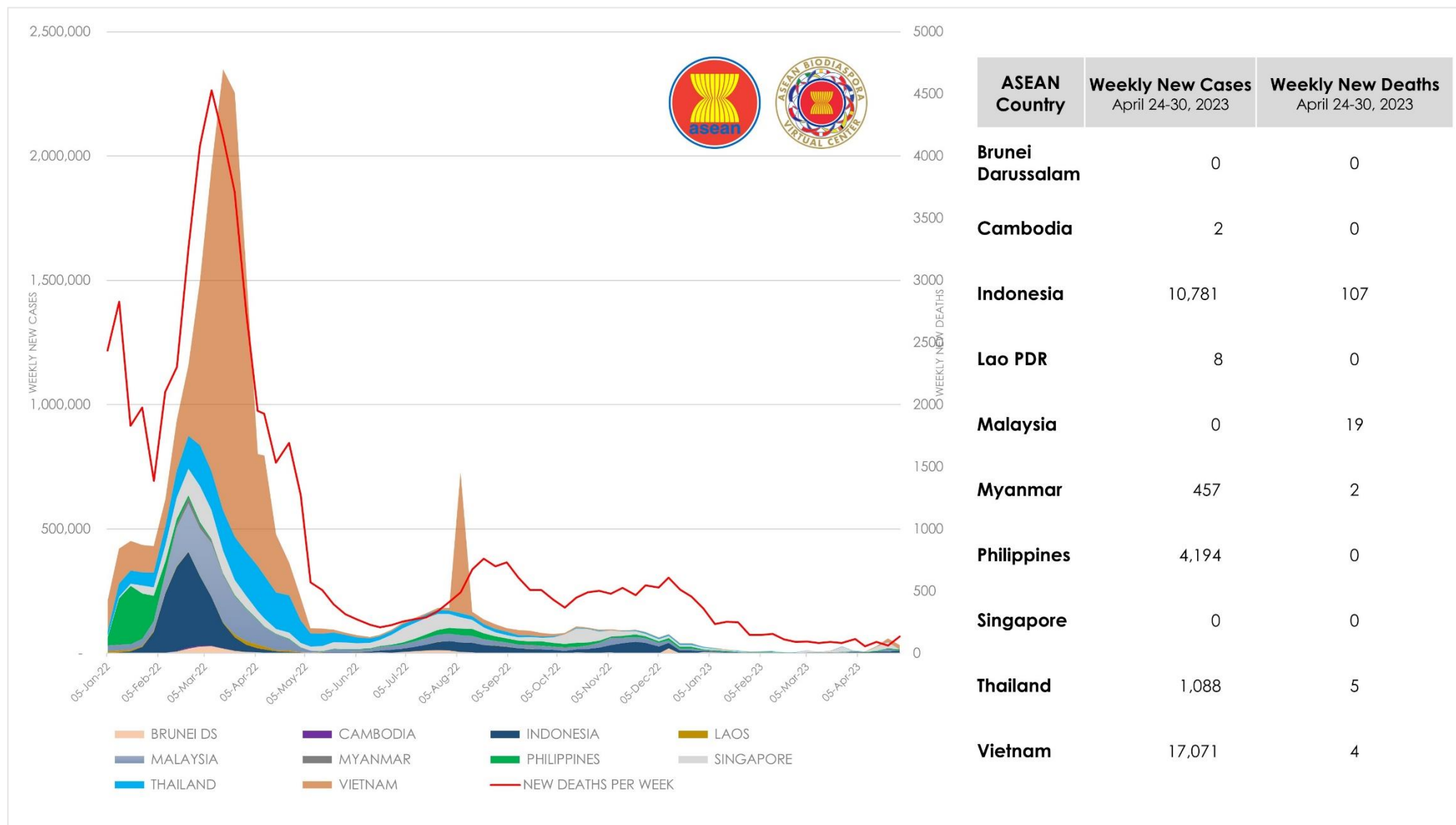
From January 1, 2021 to May 3, 2023





ASEAN Weekly COVID-19 New Cases and New Deaths

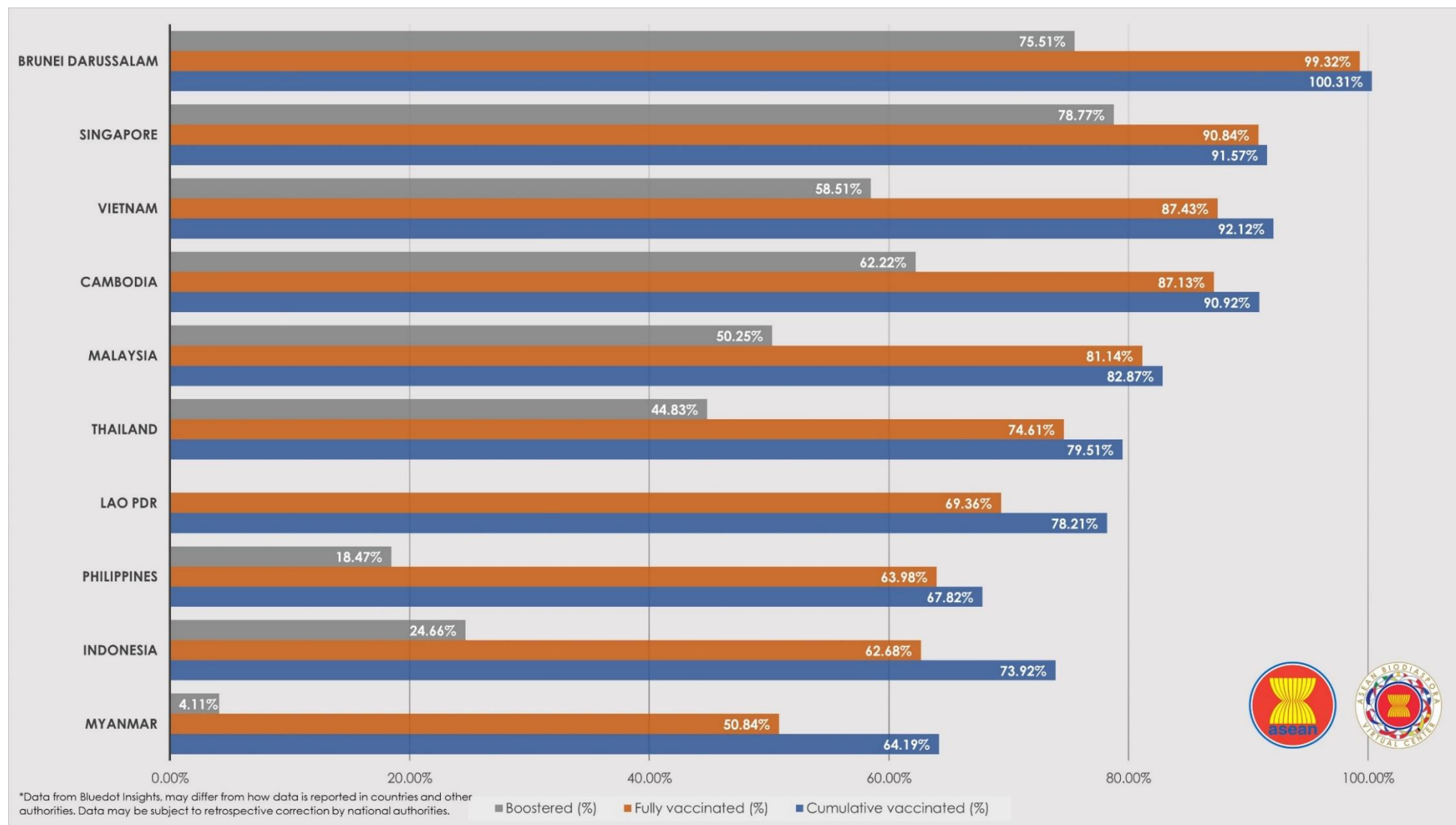
From January 1, 2022 to April 30, 2023





ASEAN COVID-19 Vaccination Status

as of 09 March 2023

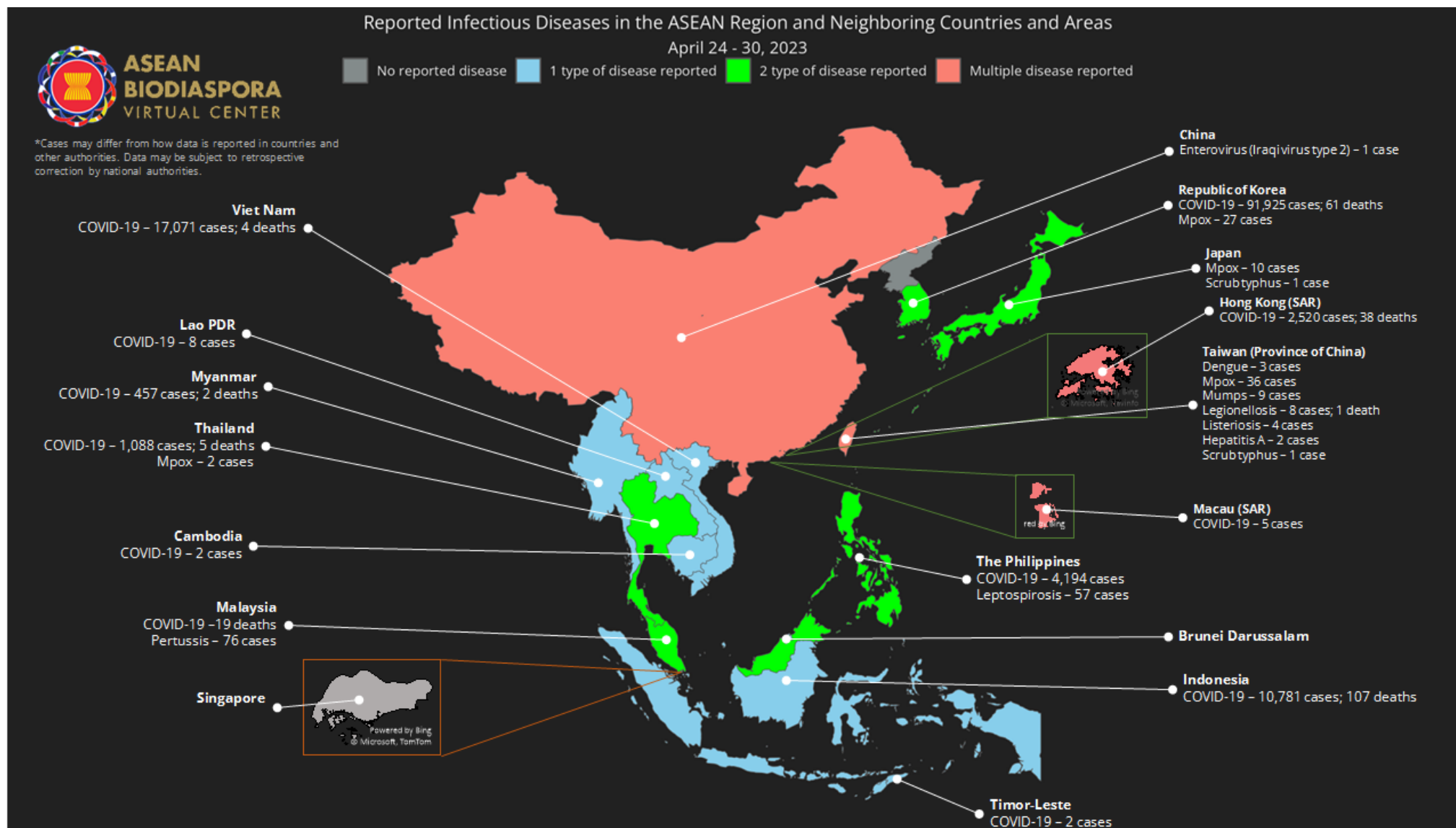


*Last update in COVID-19 vaccination status in ASEAN was on March 9, 2023.



Reported Infectious Diseases in ASEAN Region and Neighboring Countries

From April 24-30, 2023





Reported Infectious Diseases Other than COVID-19, Mpox, Measles, and Dengue

April 24-30, 2023

Infectious Disease Global Updates

Lassa Fever

- Nigeria:** Between 01-January-2023 and 30-April-2023, there have been 4,908 reported cases, of which 897 have been lab-confirmed. Among confirmed cases, there have been 152 deaths. Case Fatality Rate (CFR): 17%. Of the total confirmed cases; 42 (4.6%) are among healthcare workers. Lassa Fever is endemic in Nigeria with annual peaks typically observed during the dry season (December–April), following the reproduction cycle of the *Mastomys* rats (main reservoir) in the wet season (May – November). BlueDot Intelligence team considers this event of moderate concern at the local and regional levels while lower at the global scope: 1) Outbreak response may be inadequate given healthcare's reduced national capacity due to multiple ongoing health emergencies (including measles, diphtheria, cholera, meningitis, the ongoing public health emergencies of COVID-19 and mpox); 2) While there is no evidence of airborne spread, and person-to-person transmission is considered to be limited, there have been reports of sexual transmission of Lassa virus which adds to existing challenges in containment; 3) The combination of a long incubation period for the disease (6-21 days) and the fact that four in five people who become infected Lassa virus will have no symptoms challenges the further spread containment; 4) Lassa fever symptoms overlap with other viral hemorrhagic fevers such as Ebola virus, yellow fever, malaria or typhoid fever. Thus, diagnosis requires laboratory testing such as antigen detection tests or reverse transcriptase polymerase chain reaction (RT-PCR) assay. These add costs to an already overwhelmed healthcare system; 5) There are no vaccines to protect against infection; and 6) The present number of affected healthcare workers and reported shortages of personal protective equipment (PPE) indicates a high risk of healthcare-associated infections. [BlueDot Alerts, May 2, 2023]

Infectious Disease in ASEAN Region and Neighboring Countries Updates

Pertussis

- Indonesia:** Sabah recorded 76 cases of pertussis or whooping cough between January and on April 27, which is a 986% increase compared to the same period last year, which was only seven cases, said Health Minister Dr. Zaliha Mustafa.³ He said Kota Kinabalu recorded the highest number of cases which was 20 cases, followed by Lahad Datu (16), Tawau (15), Putatan (8) and four cases each in Semporna and Papar.³ He said Kunak and Tambunan recorded three cases while Sandakan, Kinabatangan and Tuaran each recorded one case.³ "One case of death was recorded during the period and 41 cases involved citizens, 27 Filipinos and eight cases involved Indonesians," he told reporters after the Sabah State Zone White Paper Townhall session here today.³ He said pertussis is a vaccine-preventable disease caused by the bacteria *Bordetella pertussis*.³ "It can infect anyone regardless of age, but infants and children who have not been fully immunized are at the highest risk of infection." he said.³ Dr. Zaliha said in connection with that, the Ministry of Health (KKM) through the Sabah State Health Department (JKNS) has seriously increased monitoring and prevention to ensure that the disease is not contagious.³ [\[Full article\]](#)



Leptospirosis

- Philippines:** The local government of Zamboanga City has offered a kilo of rice for every rat that a resident will catch, as the city enlists the help of villagers in curbing the rising number of leptospirosis infections.⁴ Beginning on April 23, residents can get their pack of rice for every rat, either dead or alive, that they bring to a designated collection center run by the City Environment and Natural Resources Office.⁴ Belen Sheila Covarrubias, public information officer of the city government, said the “rat for rice” program was conceived by Mayor John Dalipe to control the proliferation of rodents, especially in the villages of Tumaga, Guiwan, Pasonanca, Mampang, Tetuan, Tugbungan and Ayala where cases of leptospirosis were found to have increased this year.⁴ Dr. Dulce Amor Miravite, city health officer, said they recorded a total of 166 leptospirosis cases in 2022 with 27 deaths, which was 768 percent higher compared to 2021.⁴ Sixty-nine or 42 percent of the 166 cases were recorded after the city was hit by Typhoon “Paeng,” which caused flooding across a number of villages. As of March 4 this year, 57 cases, with seven deaths, were reported.⁴ Most cases were reported within two weeks after the March 11 and March 31 flooding, according to the City Health Office.⁴ In Barangay Tetuan, village chief Walmart Atilano said the program, which runs until Saturday, gathered steam by the third day of its rollout.⁴ “At first, residents felt a bit awkward,” he noted, adding that nine people participated on the first day, then four on the second, then 16 on the third.⁴ Efigenio Julian Jr., village chair of Pasonanca, told the Inquirer that residents managed to turn in 15 rats since April 23.⁴ Julian suspected that the residents were not doing enough due to the quality of rice given as an incentive.⁴ “What they get is a kilo of NFA (National Food Authority) rice to one rat.⁴ Some residents here don’t like the quality of the rice,” he added.⁴ Jacqueline Lim, village chair of Tumaga, said only a handful of residents in her community participated in the campaign even as barangay personnel did a massive information drive.⁴ She said that since April 23, only three rats were brought in by three residents.⁴ “I guess they don’t like the quality of rice because it has a foul smell and is yellowish.⁴ If we give them [top] quality rice, perhaps many will actively participate in catching rats,” Lim said.⁴ [\[Full article\]](#)

Scrub typhus

- Japan:** Aomori Prefecture announced on the 27th that it has confirmed for the first time this year the tsutsugamushi disease, which is transmitted through the bites of tsutsugamushi.⁵ The patients are a woman in her 50s from Hachinohe City and a woman in her 70s from the Goshogawara Public Health Center.⁵ The woman in Hachinohe City has been discharged from the hospital, and the woman in the Goshogawara district is in the hospital but is recovering.⁵ A person in charge of the prefectural health and hygiene division said, “Since the temperature has risen early this year, the outbreak may be earlier than usual” calling.⁵ The two patients each developed symptoms such as fever and rash in mid-April.⁵ A medical institution determined that it was tsutsugamushi disease based on punctures in the skin, and reported the outbreak to the public health center.⁵ Tsutsugamushi is a type of poisonous mites that live in forests, grasslands, and cultivated land.⁵ By being bitten by the larvae, it is infected with the causative agent of tsutsugamushi disease.⁵ Symptoms develop after an incubation period of 5 to 14 days.⁵ If treatment is delayed and the disease becomes severe, symptoms of pneumonia and encephalitis will appear, and the fatality rate will increase.⁵ To prevent infection, the prefectural health and sanitation division is calling for measures to prevent tsutsugamushi bites, such as avoiding exposing bare skin when entering the mountains and taking a bath after returning home to wash off the larvae.⁵ [\[Full article\]](#)



Enterovirus

- **China:** One new confirmed case of enterovirus infection complicated by severe disease in China, a 1-year-old boy in eastern China, was confirmed to be infected with Iraqi virus type 21 complicated by severe encephalitis on May 1 after a notification test; another new case of enterovirus type 71. The mild case is a 1-year-old girl from the north.⁶ Luo Yijun, deputy director of the CDC, said that enteroviruses will enter the epidemic period starting next week.⁶ This year, there have been 3 severe cases of enteroviruses, all of which are different types.⁶ Although the symptoms are similar, repeated infections or multiple types of simultaneous infections may occur.⁶ According to the statistics of the CDC, last week (April 23 to April 29), there were 10,066 outpatient and emergency visits to enterovirus in China, an increase of 26.0% from the 7,988 visits in the previous week, and it was close to the prevalence threshold of 11,000 visits, and higher than the same period since 2017.⁶ Recent laboratory monitoring has shown that different types of enteroviruses such as enterovirus 71, enterovirus D68, and keshaqi A are active in the community, and the risk of epidemic transmission has increased.⁶ [[Full article](#)]



Dengue Cases in ASEAN Region

From January 1 to May 2, 2023



Dengue cases in ASEAN region

Country	Dengue Cases	New Cases since the previous report	Deaths	Case Fatality Rate (CFR)
Brunei Darussalam	-	-	-	-
Cambodia	750	0	2	0.27%
Indonesia	3,857	0	24	0.62%
Lao PDR	1,146	0	0	0.00%
Malaysia	35,202	0	22	0.06%
Myanmar	-	-	-	-
Philippines	31,459	3,789	99	0.31%
Singapore	2,724	0	0	0.00%
Thailand	3,855	0	1	0.03%
Vietnam	20,537	0	0	0.00%
Total	99,530	3,789	148	0.15%

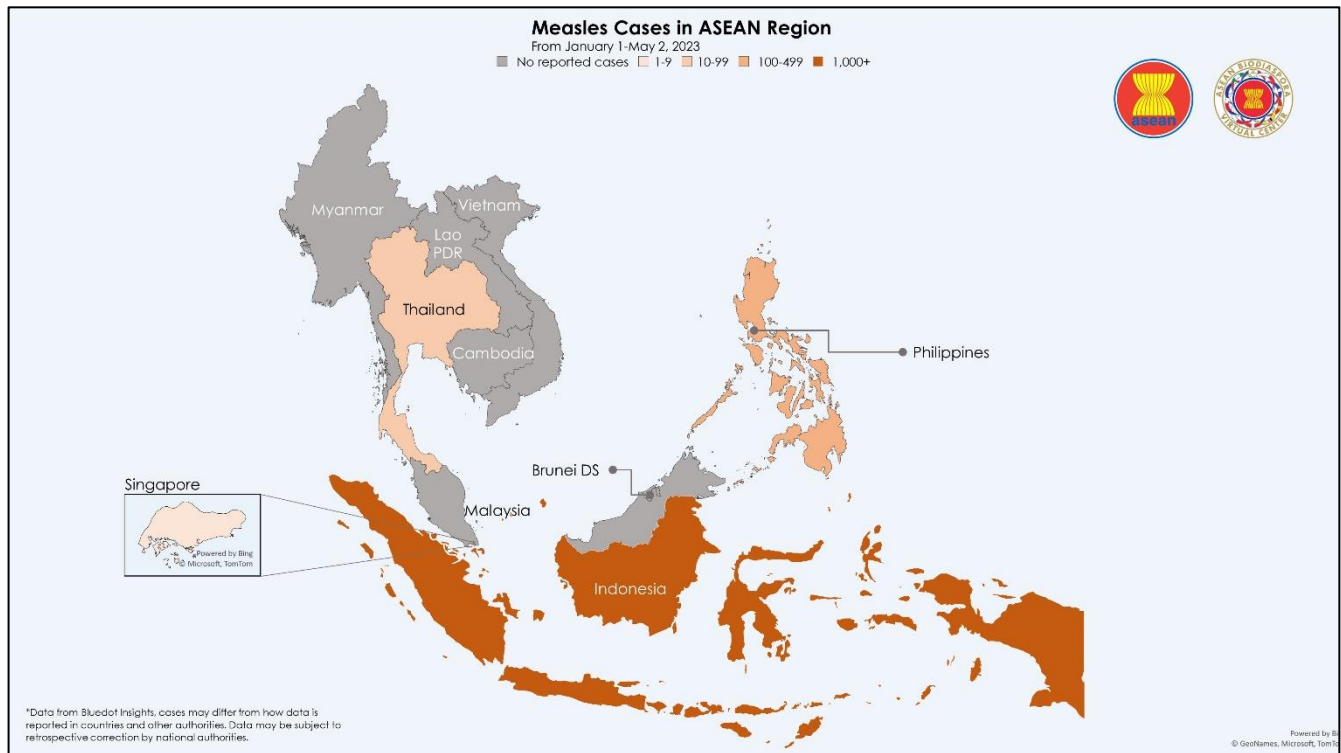
*Data from Bluedot Insights, cases may differ from how data is reported in countries and other authorities. Data may be subject to retrospective correction by national authorities.

- ASEAN region reported **3,789** new dengue cases in the Philippines since previous report. The region reported **99,530** total cases and **148** total deaths in 2023 with **0.15%** CFR.



Measles Cases in ASEAN Region

From January 1 to May 2, 2023



Measles cases in ASEAN region

Country	Measles Cases	New Cases since the previous report	Deaths	Case Fatality Rate (CFR)
Brunei Darussalam	-	-	-	-
Cambodia	-	-	-	-
Indonesia	2,161	1,214	17	0.79%
Lao PDR	-	-	-	-
Malaysia	-	-	-	-
Myanmar	-	-	-	-
Philippines	308	0	-	0.00%
Singapore	4	0	-	0.00%
Thailand	73	0	-	0.00%
Vietnam	-	-	-	-
Total	2,546	1,214	17	0.67%

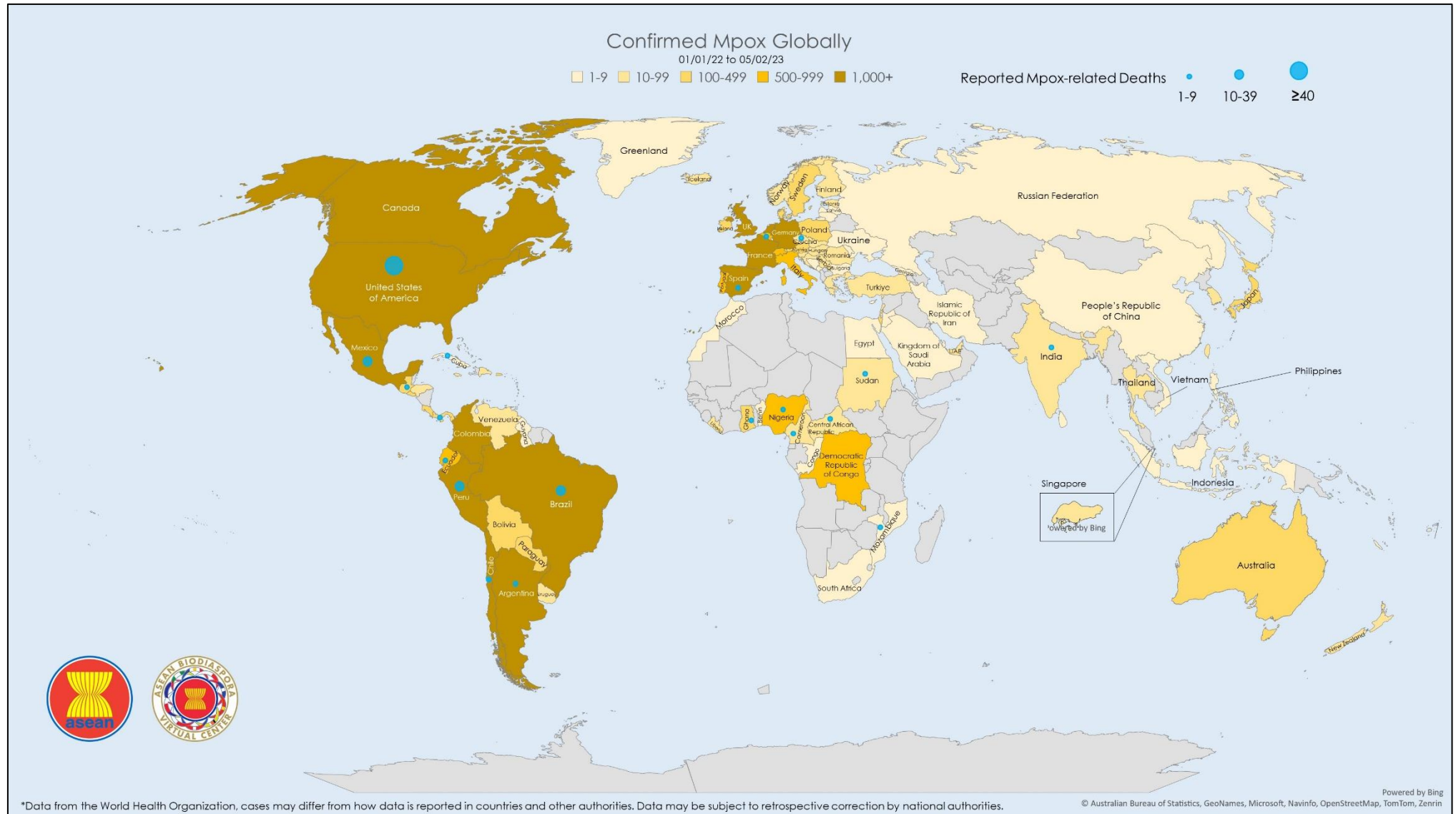
*Data from Bluedot Insights, cases may differ from how data is reported in countries and other authorities. Data may be subject to retrospective correction by national authorities.

- ASEAN region reported **1,214** new measles cases in Indonesia since the previous report. The region reported **2,546** total cases and **17** total deaths in 2023 with **0.67%** CFR.



Mpox (Monkeypox) Cases Reported Globally

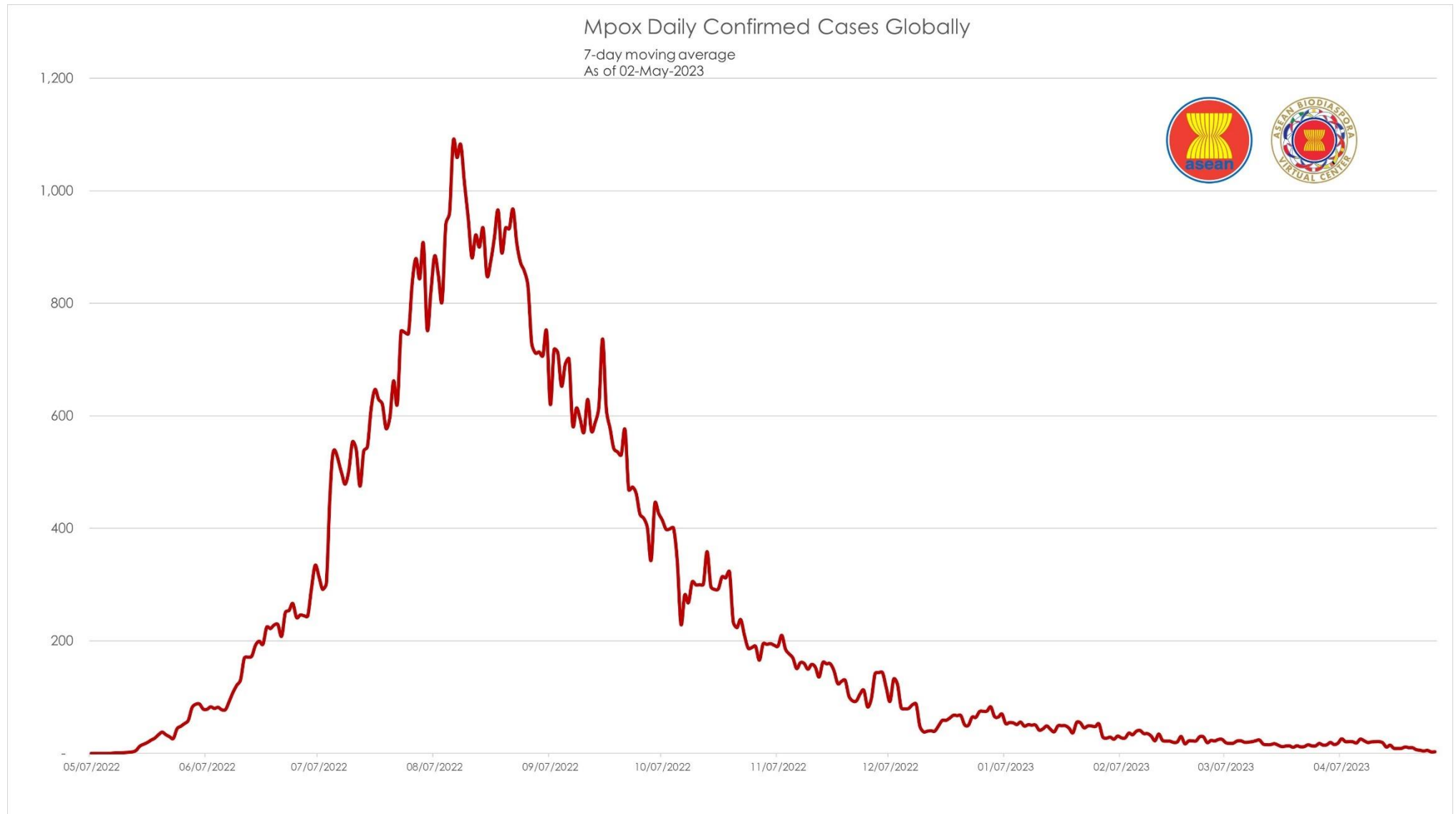
as of May 2, 2023





Mpox Daily Trend Globally

as of May 2, 2023





Mpox: Highlights and Situation Overview

- As of 02 May 2023 (1PM, GMT+7), worldwide, there were **87,242** confirmed cases, including **130** deaths. Globally, Case Fatality Rate (CFR) was **0.15%**.
- 51 confirmed cases** in the ASEAN region, with CFR of **0%**.
- 87,191 confirmed cases** of Mpox have been reported in other **5 regions** (other than ASEAN region):

Mpox cases in ASEAN region

Country	Total Cases	New Cases	Deaths	Case Fatality Rate (CFR)
Indonesia	1	-	-	0.00%
Philippines	4	-	-	0.00%
Singapore	23	-	-	0.00%
Thailand	21	2	-	0.00%
Vietnam	2	-	-	0.00%
ASEAN Total	51	2	-	0.00%

Mpox cases in Asia-Pacific region

Country/Territory	Total Cases	New Cases	Deaths	Case Fatality Rate (CFR)
Australia	144	-	-	0.00%
India	22	-	1	4.55%
Japan	120	-	-	0.00%
New Caledonia	1	-	-	0.00%
New Zealand	41	-	-	0.00%
People's Republic of China*	40	-	-	0.00%
Republic of Korea	30	-	-	0.00%
Sri Lanka	2	-	-	0.00%
Asia-Pacific Total	400	-	1	0.25%

*People's Republic of China – including Hong Kong (SAR), Macao (SAR), and Taiwan (Province of China)

Top 5 countries with most mpox cases globally

Country	Total Cases	New Cases	Deaths	Case Fatality Rate (CFR)
United States of America	30,154	14	44	0.15%
Brazil	10,915	11	16	0.15%
Spain	7,549	-	3	0.04%
France	4,144	-	-	0.00%
Colombia	4,090	-	-	0.00%



Mpox cases per region

REGION	TOTAL CONFIRMED CASES SINCE JANUARY 1, 2022	NEW CASES SINCE THE PREVIOUS REPORT	TOTAL DEATHS	CASE FATALITY RATE
AFRICA	1,619	108	19	1.17%
AMERICAS	59,240	43	104	0.18%
ASEAN	51	2	-	0.00%
ASIA PACIFIC	400	-	1	0.25%
EUROPE	25,610	-	6	0.02%
MIDDLE EAST	322	1	-	0.00%
TOTAL	87,242	154	130	0.15%

Global Update

- Republic of Korea:** On Thursday (27/4/2023), South Korea reported six new cases of mpox or what was formerly known as monkeypox.¹ Thus, the total number of cases is 40 cases. Quoted from Antara, the Korea Centers for Disease Prevention and Control (KDCA), three cases were reported in Seoul and one case each was found in Incheon, Daegu and Gangwon Provinces.¹ One of the cases had recently visited Japan, while the other five cases had no history of overseas travel, he said.¹ South Korea first reported cases of mpox on June 22 last year and four other cases in March.¹ The first five cases of monkeypox in South Korea were related to a history of foreign travel.¹ Nonetheless, the majority of recent cases recorded since April 7 are believed to be transmitted locally, or without a history of travel to other countries.¹ [\[Full article\]](#)
- Hong Kong (SAR):** Hong Kong health authorities are investigating a new monkeypox case involving a 34-year-old man who is a close contact of the city's fifth confirmed infection.² The Centre for Health Protection said the man was epidemiologically linked to the other patient, 59, who was confirmed to have contracted the rare disease caused by the monkeypox virus last Friday.² The latest patient was in good health before becoming infected, the centre said. He was admitted to Alice Ho Miu Ling Nethersole Hospital in Tai Po for precautionary quarantine on Sunday, when he also developed a rash on his body.² The centre's public health laboratory services branch confirmed the man tested positive for the virus on Monday.² He was in a stable condition.² The man, who had not been vaccinated against the disease, had been in Taiwan from April 9 to 15.² Two of his household members would be quarantined and given post-exposure vaccinations, the centre said, adding that they remained asymptomatic.² Epidemiological investigations were ongoing.² The 59-year-old man's case was the city's fifth confirmed monkeypox infection.² The man has a chronic illness and was admitted to Princess Margaret Hospital in Kwai Chung. He was reported as being in a stable condition.² Investigation found the patient, who had travelled to mainland China's Guangdong province multiple times from April 2 to 19, had high-risk exposure during the incubation period. Hong Kong's third, fourth and fifth cases were all recorded last month.² One instance involved a man, 25, who had visited South Korea and Japan while the other infected patient, 34, was his close contact who was earlier confirmed to have the virus.² The city had its first confirmed case of the virus last September when a man, 30, returned from visiting the Philippines.² [\[Full article\]](#)



References

1. "Korea Selatan Laporkan Enam Kasus Baru Cacar Monyet." *Berita Satu*, 28 Apr. 2023, <https://www.beritasatu.com/internasional/1040770/korea-selatan-laporkan-enam-kasus-baru-cacar-monyet>.
2. Mok, Danny. "Hong Kong Investigates New Monkeypox Case, Close Contact of City's Fifth Confirmed Infection." *The Star*, 2 May 2023, <https://www.thestar.com.my/aseanplus/aseanplus-news/2023/05/02/hong-kong-investigates-new-monkeypox-case-close-contact-of-citys-fifth-confirmed-infection>.
3. "Whooping Cough Cases in Sabah Increased by 986 Percent." *Daily Express Malaysia*, 28 Apr. 2023, dailyexpress.com.my/news/211913/kes-batuk-kokol-di-sabah-meningkat-986-peratus-/.
4. Alipala, Julie S. "Zamboanga City Adopts 'rat for Rice' to Curb Leptospirosis Cases." *INQUIRER.Net*, 28 Apr. 2023, newsinfo.inquirer.net/1762140/zamboanga-city-adopts-ratfor-rice-to-curb-lepto-cases.
5. "Tsutsugamushi Disease Confirmed for the First Time This Year / 2 Areas in Aomori Prefecture." *Web 東奥*, 27 Apr. 2023, www.toonippo.co.jp/articles/-/1543913.
6. Yang, Yatang. "A 1-Year-Old Boy with Severe Enterovirus Was 'Ikovirus' Luo Yijun: Multiple Types of Epidemics May Cause Repeated Infection." *UDN*, 2 May 2023, udn.com/news/story/7266/7136856.
7. "New Survey Results Show Health Systems Starting to Recover from Pandemic." *World Health Organization*, 2 May 2023, www.who.int/news/item/02-05-2023-new-survey-results-show-health-systems-starting-to-recover-from-pandemic.
8. Marchese, Anthony M., et al. "NVX-Cov2373 Vaccine Efficacy against Hospitalization: A Post Hoc Analysis of the Prevent-19 Phase 3, Randomized, Placebo-Controlled Trial." *Vaccine*, 29 Apr. 2023, <https://doi.org/10.1016/j.vaccine.2023.04.054>.
9. "The Biden-Harris Administration Will End COVID-19 Vaccination Requirements for Federal Employees, Contractors, International Travelers, Head Start Educators, and CMS-Certified Facilities." *The White House*, 1 May 2023, www.whitehouse.gov/briefing-room/statements-releases/2023/05/01/the-biden-administration-will-end-covid-19-vaccination-requirements-for-federal-employees-contractors-international-travelers-head-start-educators-and-cms-certified-facilities/.



Report generated by

ASEAN Biodiversity Virtual Center (ABVC)
in collaboration with **Bluedot Inc.**

Email: support@biodiaspora.org

Facebook: <https://facebook.com/ASEANBiodiaspora>

Instagram: <https://instagram.com/ASEANBiodiaspora>



In partnership with
Canada