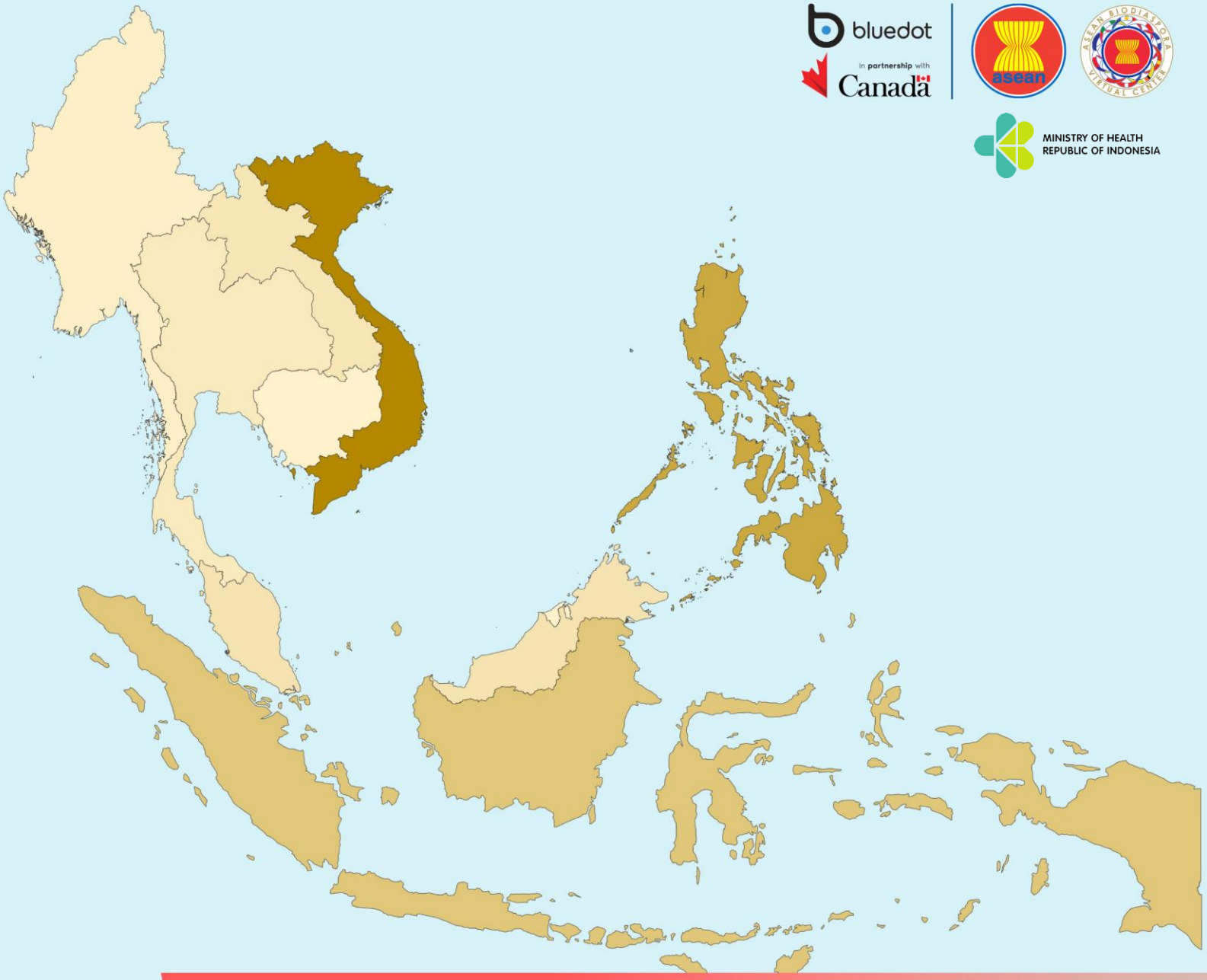

COVID-19, Mpox, and Other Infectious Diseases

Situational Report in the ASEAN Region

ASEAN BioDiaspora Virtual Center (ABVC)

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ASSOCIATION OF SOUTHEAST ASIAN NATIONS

ASEAN BIODIASPORA VIRTUAL CENTER (ABVC)

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COVID-19: Highlights and Situation Overview

Global Update

- **Worldwide**, there have been over 682 million cases and over 6 million deaths attributed to COVID-19.
- **Republic of Korea**'s new COVID-19 cases rose to over 13,000 on March 22 (Wednesday), two days after the country lifted its mask mandate on public transportation.[16] According to the data of the Korea Disease Control and Prevention Agency (KDCA), the country reported 13,081 new COVID-19 cases including 23 cases from overseas, bringing the total number of cases to 30,728,057.[16] [Full report]
- **India**'s Ministry of Health reported on March 22 (Wednesday) a single-day rise of 1,134 new COVID-19 cases and 5 COVID-19-related deaths.[17] The number of active cases has increased to 7,026, comprising 0.02% of the total infections, while the case fatality rate was recorded at 1.19%.[17] The daily positivity rate was recorded at 1.09% while the weekly positivity was at 0.98%.[17] [Full article]

Regional Update

- **Cambodia** began its sixth dose campaign against COVID-19 on January 9, 2023 to provide more protection to its population and prevent deaths due to the disease. Cambodia has inoculated, for their sixth dose, about 303,169 people. Since January 9, Cambodia has administered 1,745,755 for their fifth dose of COVID-19 vaccine. A total of 10,599,819 people in Cambodia has received their third dose since October 11, 2021. [revised report from March 13, 2023]

Research Update (Published and peer-reviewed studies)

- The study on ***Post COVID-19 irritable bowel syndrome*** found that COVID-19 is associated with an increased risk of developing long-term gastrointestinal disorders, including irritable bowel syndrome (IBS).[18] The study involved 2,183 patients hospitalized in 36 facilities in 14 countries including Italy, Bangladesh, Cyprus, Egypt, Israel, India, Macedonia, Malaysia, Romania, Russian Federation, Serbia, Spain, Sweden, and Turkey.[18] Patients who had contracted COVID-19 were evaluated upon admission to the hospital and then followed up for the next 12 months, comparing their condition with that of patients not infected with the coronavirus.[18] The data analysis showed that patients hospitalized for COVID-19 were more frequently reported with gastrointestinal symptoms (59.3%) compared to the control group (39.7%).[18] Furthermore, the diagnosis of irritable bowel syndrome also emerged more frequently, which were found to be associated with the coexistence of allergies, breathing difficulties during hospitalization for COVID-19, and chronic intake of proton pump inhibitors (gastro protectant drugs that block acid production in the stomach).[18] The study concluded that compared with the control group, hospitalized patients with COVID-19 had fewer constipation problems and hard stools at 12 months after acute infection and patients with COVID-19 had significantly higher rates of IBS than controls.[18] [Full text]
- Saliva has been a COVID-19 diagnostic specimen of interest due to its simple collection, scalability, and yield.[19] This observational study, ***Persistence of SARS-CoV-2 in saliva: Implications for late-stage diagnosis and infectious duration,*** evaluated whether saliva testing captured prolonged presence of SARS-CoV-2 and potential infectiousness later in the disease course.[19] Paired saliva and nasal specimens from 96 symptomatic COVID-19 patients at University Hospital in Newark, NJ patients, were analyzed, including longitudinal analysis of paired observations from 28 of these patients who had multiple

time-points.[19] Saliva detected significantly more cases of COVID-19 beyond 5 days (86.1% [99/115] saliva vs 48.7% [56/115] nasal, p-value < 0.001), 9 days (79.4% [50/63] saliva vs 36.5% [23/63] nasal, p-value < 0.001) and 14 days (71.4% [20/28] saliva vs 32.1% [9/28] nasal, p-value = 0.010) of symptoms.[19] Additionally, saliva yielded lower cycle thresholds across all time periods, indicative of higher viral loads in saliva.[19] In the longitudinal analysis, a log-rank analysis indicated that the survival curve for saliva was significantly different from the curve for nasal swabs (p<0.001) with a median survival time for saliva of 18 days compared to 13 days for nasal swabs.[19] Saliva viral cultures among a similar COVID-19 patient cohort showed patients with positive saliva viral cultures between 7 to 28 days of symptoms.[19] Findings from this study suggest that SARS-CoV-2 RNA persists longer and in higher abundance in saliva compared to nasal swabs, with potential of prolonged propagating virus. Testing saliva may thus increase yield for detecting potentially infectious virus even beyond the first five days of symptomatic COVID-19.[19] [Full text]

- With the continual emergence and spread of new COVID-19 variants, four drug compound libraries were investigated for their antiviral activities against SARS-CoV-2.[20] This study ***Evaluation of In Vitro and In Vivo Antiviral Activities of Vitamin D for SARS-CoV-2 and Variants,*** showed that the drug screen has resulted in 121 promising anti-SARS-CoV-2 compounds, of which seven were further shortlisted for hit validation: citicoline, pravastatin sodium, tenofovir alafenamide, imatinib mesylate, calcitriol, dexlansoprazole, and prochlorperazine dimaleate.[20] In particular, the active form of vitamin D, calcitriol, exhibited strong potency against SARS-CoV-2 on cell-based assays and has been shown to work by modulating the vitamin D receptor pathway to increase antimicrobial peptide cathelicidin expression.[20] However, the weight, survival rate, physiological conditions, histological scoring, and virus titre between SARS-CoV-2 infected K18-hACE2 mice pre-treated or post-treated with calcitriol were negligible, indicating that the differential effects of calcitriol may be due to differences in vitamin D metabolism in mice and warrants future investigation using other animal models.[20] [Full text]

- Pre-existing SARS-CoV-2-reactive T cells have been identified in SARS-CoV-2- unexposed individuals, potentially modulating COVID-19 and vaccination outcomes.[21] This study, ***Functional SARS-CoV-2 cross-reactive CD4+ T cells established in early childhood decline with age***, provides evidence that functional cross-reactive memory CD4+ T cell immunity against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is established in early childhood, mirroring early seroconversion with seasonal human coronavirus OC43.[21] A comprehensive study of the humoral and cellular HCoV-OC43-specific and pre-existing SARS-CoV-2- reactive immune responses in cohorts comprising samples from SARS-CoV-2-unexposed children, young/middle-aged adults, older adults, and COVID-19 convalescents 12 mo post-infection for comparison, was conducted.[21] Out of the four seasonal HCoVs, OC43 was used as the prototype of the genus β-coronaviruses, to which SARS-CoV-2 belongs.[21] Humoral and cellular immune responses against OC43 and SARS-CoV-2 were assessed in SARS-CoV-2-unexposed children (paired samples at age two and six) and adults (age 26 to 83).[21] Pre-existing SARS-CoV-2-reactive CD4+ T cell responses targeting spike, nucleocapsid, and membrane were closely linked to the frequency of OC43-specific memory CD4+ T cells in childhood. The functional quality of the cross-reactive memory CD4+ T cell responses targeting SARS-CoV-2 spike, but not nucleocapsid, paralleled OC43-specific T cell responses.[21] OC43-specific antibodies were prevalent already at age two. However, these did not increase further with age, contrasting with the antibody magnitudes against HKU1 (β-coronavirus), 229E and NL63 (α-coronaviruses), rhinovirus, Epstein–Barr virus (EBV), and influenza virus, which increased after age two.[21] The quality of the memory CD4+ T cell responses peaked at age six and subsequently declined with age, with diminished expression of interferon (IFN)-γ, interleukin (IL)-2, tumor necrosis factor (TNF), and CD38

in late adulthood.[21] Age-dependent qualitative differences in the pre-existing SARS-CoV-2-reactive T cell responses may reflect the ability of the host to control coronavirus infections and respond to vaccination.[21] [Full text]

Cases and Deaths as of 22 March 2023

- As of 22 March 2023 (1PM, GMT+7), worldwide, there were **682,715,331** confirmed cases, including **6,821,190** deaths. Globally, Case Fatality Rate (CFR) was **1.2%.**
- **35,630,507 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	16-Mar-23	280,790	1,129	225	-	64,053	450,404	445,929	338,987	99.3
	Cambodia	27 Jan 20	17-Mar-23	138,721	1	3,056	-	841	15,244,858	14,609,937	10,433,215	87.1
	Indonesia	02 Mar 20	21-Mar-23	6,742,061	473	160,977	2	2,490	203,657,535	172,693,321	67,952,274	62.7
	Lao PDR	24 Mar 20	22-Mar-23	218,030	2	758	-	3,041	5,888,649	5,222,417		69.4
	Malaysia	25 Jan 20	22-Mar-23	5,047,040	223	36,967	-	15,788	28,125,245	27,536,657	17,056,957	81.1
	Myanmar	23 Mar 20	21-Mar-23	633,993	1	19,490	-	1,173	34,777,314	27,545,329	2,227,351	50.8
	Philippines	30 Jan 20	21-Mar-23	4,079,237	190	66,288	10	3,771	78,369,243	73,937,435	21,341,197	64.0
	Singapore	23 Jan 20	13-Mar-23	2,234,996	-	1,722	-	39,049	5,161,990	5,120,768	4,440,289	90.8
	Thailand	13 Jan 20	13-Mar-23	4,728,482	178	33,929	5	6,791	57,005,497	53,486,086	32,143,431	74.6
	Vietnam	23 Jan 20	21-Mar-23	11,527,157	11	43,186	-	11,950	90,450,881	85,848,363	57,452,750	87.4
	ASEAN COUNTRIES			**35,630,507**	**2,208**	**366,598**	**17**	**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	247,375,773	-	2,026,034	-
AFRICA	12,806,135	-	258,633	-
AMERICAS	193,315,007	13,217	1,199,570	10
EUROPE	193,587,188	50	2,970,335	-
TOTAL	**647,084,103**	**13,267**	**6,454,572**	**10**

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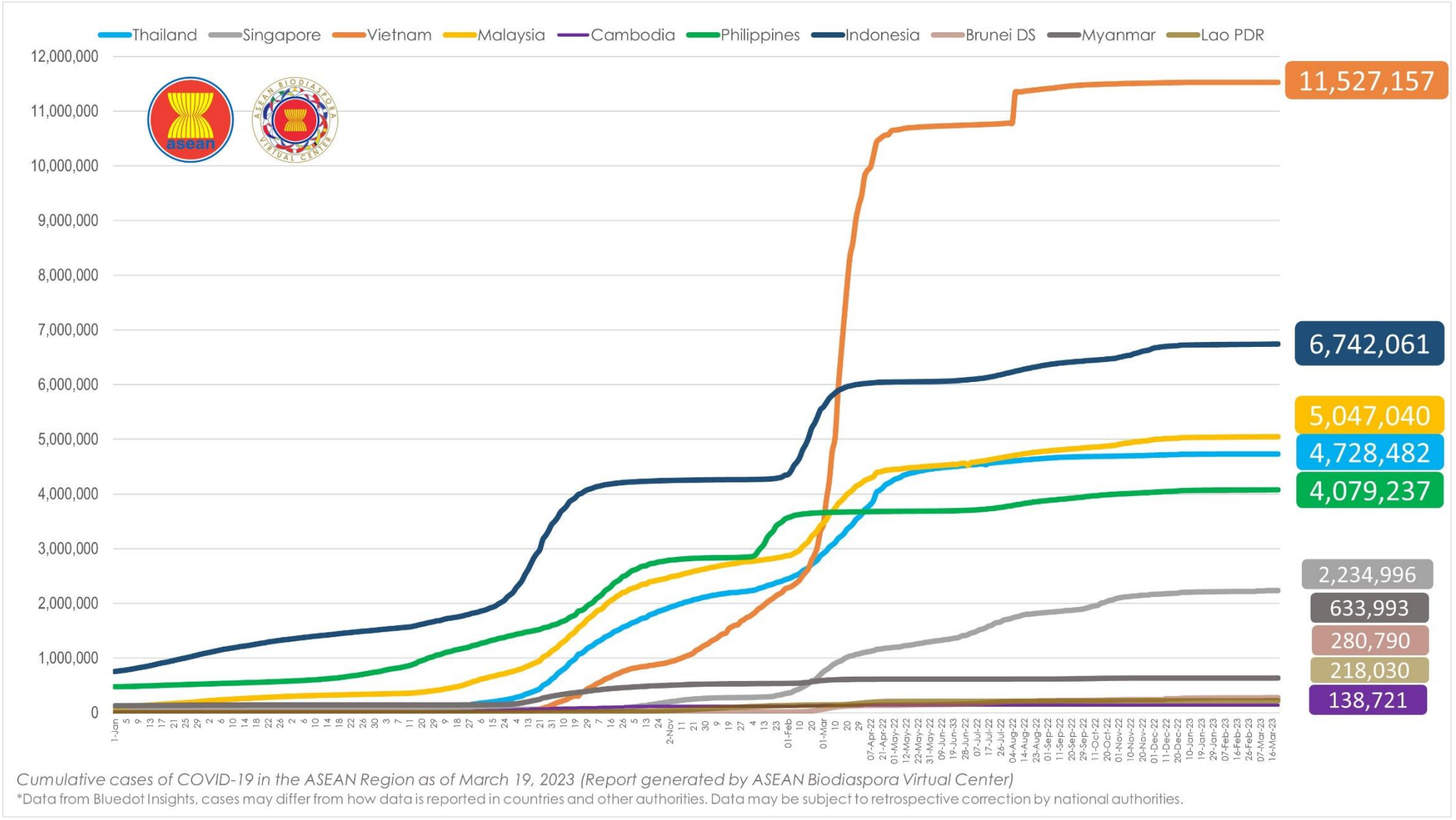
COVID-19 Epi curve among ASEAN Countries:

From January 1, 2021 to March 21, 2023



Cumulative cases of COVID-19 in the ASEAN Region as of March 19, 2023 (Report generated by ASEAN Biodiaspora Virtual Center)

*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.

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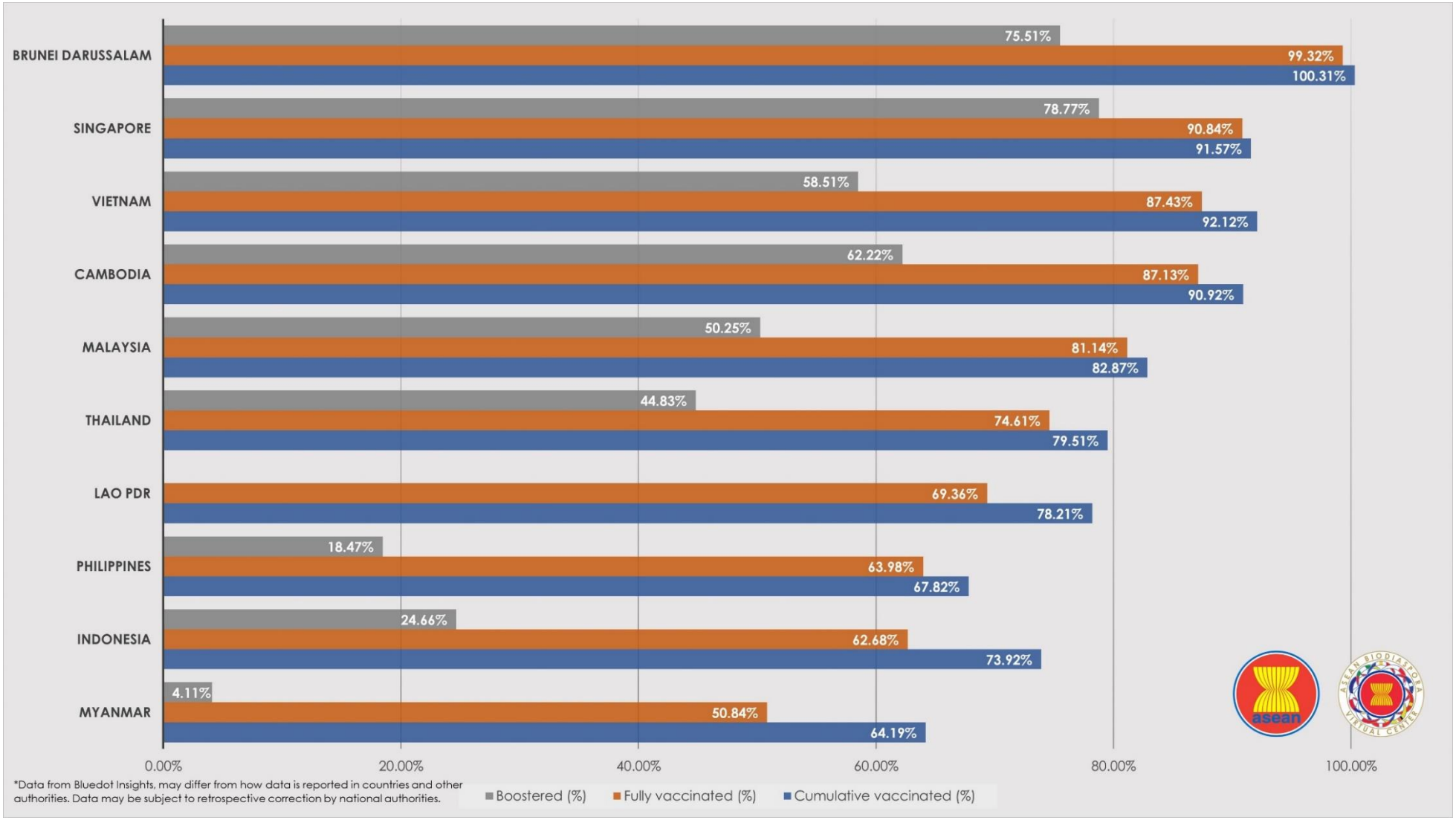
ASEAN COVID-19 Vaccination Status

as of 09 March 2023



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

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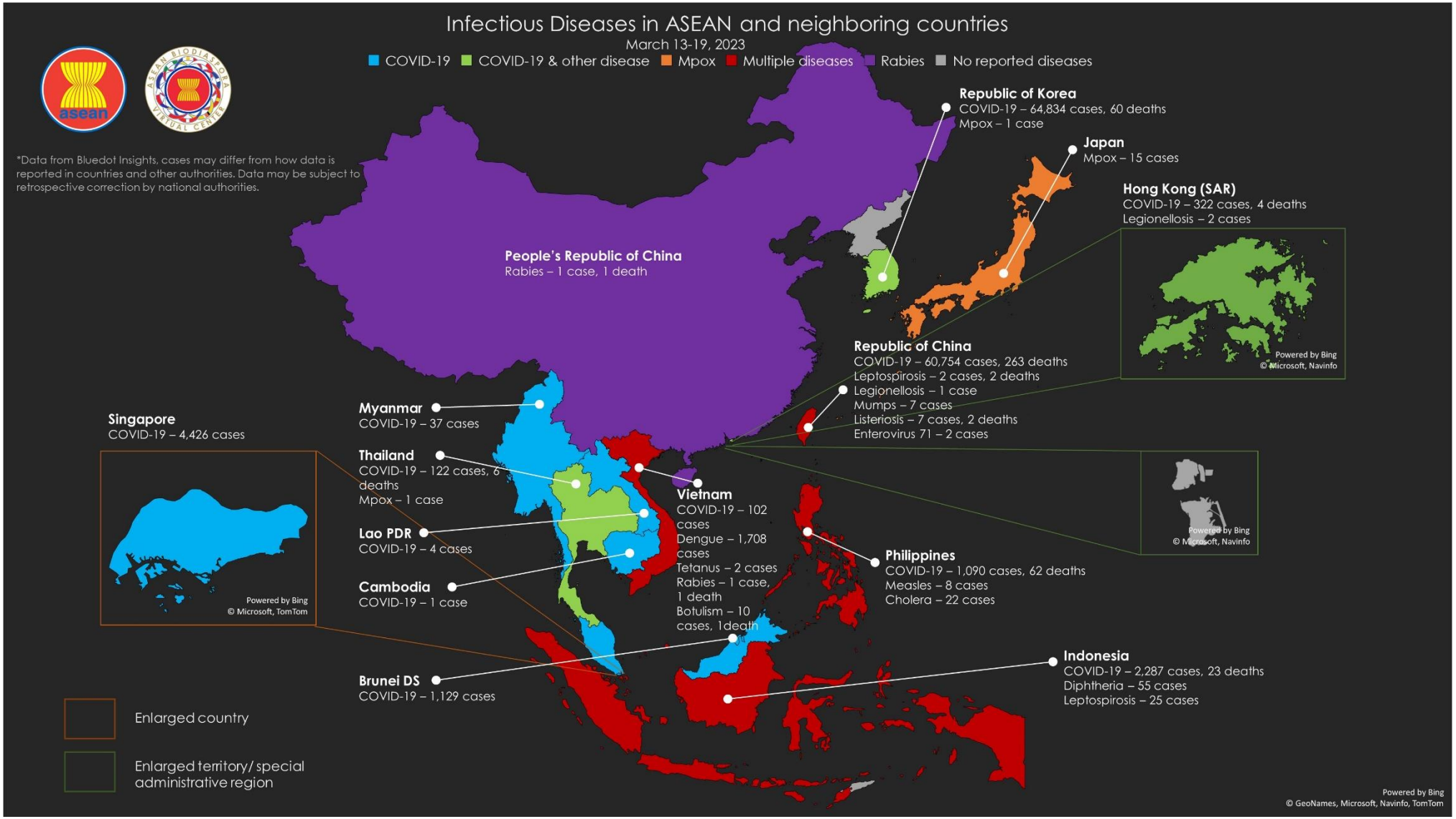
Reported Infectious Diseases in ASEAN Region and Neighboring Countries

From March 13-19, 2023



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

March 13-19, 2023

Infectious Disease Global Updates

Marburg Disease

- **Tanzania**: On 21-Mar-2023, health authorities identified Marburg disease as the cause for the unknown illness which had been associated with five deaths in Kagera Region last week. As of 16-Mar-2023, there were 8 human cases including 5 deaths (which includes the death of one healthcare worker). This is the first historical Marburg virus outbreak confirmed in Tanzania. Three patients are currently receiving treatment in the hospital and 161 contacts have been identified and are being monitored by authorities. There is a concurrent outbreak of Marburg disease in Equatorial Guinea, a country located on the west coast of Africa, approximately 2,900 km away from Tanzania. The distance between these two outbreaks makes it unlikely that they are linked. However, the driving factors behind these outbreaks may be similar with respect to seasonality and wildlife exposure. Tanzania has one of the lowest rates of access to healthcare globally, which presents additional challenges for detection and containment, should the outbreak expand. Historically, there have been concerns around transparency and timely sharing of disease information between Tanzania and global partners including the World Health Organization (WHO). However, there appears to have been timely sharing of information with the WHO on this outbreak which has resulted in the deployment of a team of experts to support the response.

Influenza

- **Asia:** Globally, influenza activity continued to decrease following the peak in late 2022. Influenza A viruses predominated with a slightly larger proportion of A(H1N1)pdm09 viruses detected among the subtyped influenza A viruses. The proportion of influenza B virus detections increased in recent weeks. In Central Asia, influenza activity decreased overall. In Western Asia, influenza activity continued to be reported in some countries with detections of all seasonal influenza subtypes. In East Asia, influenza activity of predominantly A(H1N1)pdm09 steeply increased in China but decreased in the other reporting countries. In Southern Asia, influenza activity remained low with influenza A(H3N2) and B/Victoria lineage viruses mostly detected. In South-East Asia, influenza activity remained elevated with influenza B mainly detected in Malaysia and A(H3N2) in Singapore and Thailand.

Infectious Disease in ASEAN region and Neighboring Countries Updates

Diphtheria

- **Indonesia**: The Health Service (Dinkes) of Garut Regency, West Java, said that the number of deaths due to the diphtheria epidemic in the area had increased to nine people from a total of 14 positive cases.[4] Garut District Health Office Secretary Leli Yuliani said Garut Regency had determined the diphtheria case as an Extraordinary Event (KLB) until November 2023 to provide optimal health services.[4] Previously, he said, eight people died of diphtheria in February 2023, but has increased to nine people.[4] The diphtheria patient who died had not received the complete diphtheria vaccination as recommended by the government.[4] He said that currently the focus is on vaccination in the PangATIkan District area because many cases of diphtheria have been found in that area.[4] In East Java, the number of diphtheria cases was 51 cases spread across 26

regencies/cities with four deaths until March 2023.[5] Governor of East Java Khofifah Indar Parawansa issued a Circular Letter on 17 February 2023 regarding Vigilance for Immunization Preventable Diseases (PD3I) addressed to regents/mayors throughout East Java.[5] In addition, the provincial government is also working with district/city Health Offices in conducting epidemiological investigations of diphtheria cases, implementing *Outbreak Response Immunization* (ORI) in areas affected by diphtheria cases, and preparing logistics in the form of diphtheria vaccines and anti-diphtheria serum.[5] [Full article 4, 5]

Leptospirosis

- **Indonesia**: The Health Office of Gunungkidul Regency, Special Region of Yogyakarta (DIY) appealed to the public, especially farms, to be aware of leptospirosis because there was a spike in cases from January to early March 2023.[6] There were 29 cases from January to early March 2023 with two deaths.[6] "The biggest spike was in March because there were almost 25 cases.[6] For this reason, we urge the public to be aware of leptospirosis," Head of the Gunungkidul Health Service, Dewi Irawaty said.[6] According to him, the spread of leptospirosis cases must be watched out for because there is an increasing trend.[6] Last year there were only 31 cases with four deaths.[6] In Probolinggo City, East Java, Head of Probolinggo City Health, Population Control and Family Planning (Dinkes P2KB) Dr. Nurul Hasanah Hidayati said two patients with leptospirosis died because they were allegedly late in bringing the patients to the facility.[7] "From January to March 2023 there were seven cases of leptospirosis and two of them died," he said.[7] The two patients who died as a result of exposure to leptospirosis were residents of Wonoasih and Kanigaran Districts who died in March 2023.[7] [Full article 6, 7]

Cholera

- **Philippines**: An outbreak of cholera and not amoebiasis occurred in San Carlos City in Negros Occidental.[8] Citing findings by the Epidemiology Bureau of the Department of Health (DOH), City Disaster Risk Reduction and Management officer Joe Recalex Alingasa said seven of the 22 specimens tested positive for cholera.[8] The DOH sent a team of epidemiologists to San Carlos to verify a reported outbreak of amoebiasis, which prompted the declaration of a state of health emergency by Mayor Renato Gustilo.[8] [Full article]

Tetanus

- **Vietnam**: On March 14, according to the Center for Disease Control (CDC) in Hanoi, the city has just recorded a 57-year-old male patient working as a builder with tetanus.[9] Thus, from the beginning of 2023 until now, the city has had 2 cases of tetanus, of which 1 person died.[9] Accordingly, the patient has an address in Tam Hung commune, Thanh Oai district, Hanoi.[9] About 6 months ago, the patient underwent surgery on the left heel bone. Currently, the patient's incision is still scaly and swollen due to walking.[9] 10 days ago, the patient showed symptoms of stiff jaw, difficulty speaking.[9] After that, the patient was brought by his family at 103 Military Hospital.[9] Here, the patient was diagnosed with full-blown tetanus.[9] Previously, in February 2023, an old woman (83 years old, in Ha Hoa village, Tan Phu commune, Quoc Oai district, Hanoi) died with a diagnosis of tetanus after more than 2 weeks of falling while attending an event.[9] [Full article]

Rabies

- **Vietnam:** On March 16, the Phu Yen Center for Disease Control confirmed a case of rabies death after being bitten by a domestic dog.[10] The patient is Mr. D, born in 1978, in Hoa Dong commune, Tay Hoa district. In early December 2022, Mr. D's finger was bitten by a domestic dog (the dog was not vaccinated against rabies).[10] After being

bitten, he only disinfected with red medicine and did not go to a medical facility for rabies vaccination.[10] On March 9, Mr. D had fever and fatigue, and he used drugs (unknown type) but did not improve.[10] His family took him to the hospital for examination and was hospitalized at Phu Yen Provincial General Hospital on March 11 where he was diagnosed with rabies.[10] On the same day, the patient was sent home.[10] On March 13, the patient had abdominal distension, lethargy, weakness, drooling, unable to eat and drink, and on the morning of March 14, he died at home.[10] The Phu Yen Center for Disease Control determined that eight other people were in close contact with Mr. D and were bitten by his family's pet dog.[10] Medical staff directed all of the contacts to medical facilities for consultation.[10] Tay Hoa District Health Center treated the contacts and the local veterinary agency organized rabies vaccination for dogs and cats in Hoa Dong commune.[10] [Full article]

- **People's Republic of China**: The Leying Township government reported that because someone in Aiguo Village died of rabies after being bitten by a badger.[11] According to relevant regulations, Aiguo Village, as an epidemic site, is forbidden to keep dogs within three years, and all dogs will be killed.[11] Before the culling, they issued a relevant notice, distributed leaflets and communicated with the villagers in advance.[11] At least half a month ago, many leaflets and related documents were posted in the village.[11] Red Star News reported that a netizen posted two consecutive videos on Douyin a few days ago, saying that "the people in the village took advantage of the owner's absence to strangle two four-month-old puppies to death on the spot without any notice.[11]" The video attracted the attention of many netizens.[11] Some netizens supported the policy decision, saying that "the practice is simple and rude, but it is also to protect the lives of others.[11]" There are also people who hold different opinions, "the private property of ordinary people is trampled on at will", "what a big official authority", "it's one size fits all".[11] [Full article]

Botulism

- **Vietnam:** In Ho Chi Minh City and southern provinces, clusters of botulinum poisoning cases also occurred after eating vegetarian pate.[12] On the evening of March 18, Cho Ray Hospital reported to the Ministry of Health about 10 cases of Botulinum poisoning, including 1 death in Quang Nam.[12] On the same morning, Cho Ray Hospital received a request for support from the General Hospital of the Northern mountainous region of Quang Nam about 3 clusters of suspected cases of botulinum poisoning.[12] Experts brought the remaining 5 bottles of botulinum antidote (very rare) from Cho Ray Hospital to the Northern mountainous area General Hospital of Quang Nam to support the treatment of patients.[12] At the General Hospital in the northern mountainous region of Quang Nam, the team of Cho Ray Hospital conducted an epidemiological investigation and assessed that there were 3 clusters of cases with a total of 10 people at very high risk of botulinum poisoning.[12] The first cluster of cases included 3 women and 2 men, living in Phuoc Duc commune, Phuoc Son district (Quang Nam).[12] After eating silage salted carp, all 5 people had abdominal pain, vomiting, fatigue and gradual weakness in limbs.[12] After 3 days of treatment at the General Hospital, a 40-year-old female died, and 4 cases were currently stable.[12] The second cluster of cases was identified as a 37-year-old female patient in Phuoc Chanh commune, Phuoc Son district (Quang Nam).[12] The patient ate silage salted carp on March 14 and had vomiting, weak limbs.[12] Eventually, the patient went into respiratory failure and was put on mechanical ventilation.[12] The third cluster of cases included 4 people (3 men, 1 woman with their families in Phuoc Kien commune, Phuoc Son district, Quang Nam).[12] The whole family ate silage carp and had vomiting.[12] On March 18, 2 patients with quadriplegia had respiratory failure and were hooked to a mechanical ventilator.[12] The remaining 2 patients (1 boy 12 years old and 1 female 24 years old) had mild weakness in extremities but could breathe on their own.[12] The doctors said that 3 clusters of patients ate silage

salted carp. During the processing of pickled vegetables, these were placed in a glass container with glass closed after 2-3 weeks to eat (creating anaerobic conditions for *Clostridium botulinum*).[12] [Full article]

Legionnaires Disease

- **Hong Kong (SAR)**: From March 12 to 18, one LD case was reported.[13] The case involved a male patient aged 94 with underlying illnesses, who lives in Kin Yip Court, Lin Shing Road, Chai Wan. He had a travel history during the incubation period.[13] "Epidemiological investigations are ongoing to identify potential sources of infection, high-risk exposure and clusters, if any," a spokesman for the CHP said.[13] As of March 18, 12 LD cases had been reported this year. In 2022 and 2021, there were 80 and 69 cases respectively.[13] "Men, people aged over 50, smokers, alcoholics and persons with weakened immunity are more susceptible to LD.[13] Some situations may also increase the risk of infection, including poor maintenance of water systems leading to stagnant water; living in areas with old water systems, cooling towers or fountains; using electric water heaters, whirlpools and spas or hot water spring spas; and recent stays in hotels or vessels," the spokesman said.[13] [Full article]

Human Enterovirus 71

- **Republic of China**: Two cases of enterovirus 71 (EV71) were reported last week, the Taiwan Centers for Disease Control (CDC) said yesterday, adding that it was a warning sign, as the virus has not been detected for more than a year.[14] Guo Hung-wei, director of the CDC's Epidemic Intelligence Center, said that 165,230 people visited a hospital for diarrhea last week.[14] Most of the diarrhea case clusters were caused by norovirus infection, but there were also enterovirus cases.[14] Most of last week's enterovirus cases were Enterovirus D68 (EV-D68), but 2 young children in northern Taiwan had EV71.[14] One of the EV71 cases is a 1-year-old boy who had a fever and fatigue, while the other is a 4-year-old girl who had a fever, sore throat and mouth ulcers, CDC physician Lin Yung-ching said.[14] "EV71 infection can cause nervous system complications, including encephalitis, meningitis and even acute flaccid paralysis," he said.[14] "There has been no enterovirus outbreak in the past 3 years, so many young children have never been infected with an enterovirus and do not have immunity, making cluster infections more likely," he said.[14] Mild symptoms include herpangina (blister-like sores in the mouth and throat) and foot-and-mouth disease, Lin said, adding that the 4-year-old girl's ulcers were a typical symptom.[14] This first mild case of enterovirus 71 was confirmed this year in Pingzhen District, Taoyuan City.[15] A 4-year-old girl in kindergarten developed fever, mouth rash and oral ulcers.[15] After hospitalization, the symptoms have been relieved, and she was discharged home.[15] Taoyuan City Enterovirus Epidemic Prevention Measures include suspension of classes when there are more than 2 sick children within a week.[15] [Full article 14, 15]

Zika

- **Republic of Korea:** On 21 March 2023, the Korea Centre for Disease Control recorded a case of Zika virus infection in an individual who recently returned from Indonesia. While Zika is considered endemic in Indonesia, the current state of disease activity in the country, including the latest case counts and past months' trends, is unknown. The case was identified in a woman in her 50s who travelled to Indonesia in February and sought medical care in South Korea after experiencing fatigue, high fever, rash, and conjunctivitis upon her return. Although the Zika virus is not endemic to South Korea, the vector that transmits the virus is. This could allow for further disease transmission in the country if conditions are met.

Dengue Cases in ASEAN Region

From January 1 to March 21, 2023

Dengue cases in ASEAN region

Country	Dengue Cases	New Cases since the previous report	Deaths	Case Fatality Rate (CFR)
Brunei Darussalam	-	-	-	-
Cambodia	400	0	0	-
Indonesia	2,930	0	24	0.82%
Lao PDR	548	0	0	0.00%
Malaysia	19,450	0	15	0.08%
Myanmar	-	-	-	-
Philippines	17,136	0	55	0.32%
Singapore	1,974	105	0	0.00%
Thailand	3,855	0	1	0.03%
Vietnam	13,000	7,811	0	0.00%
Total	**59,293**	**7,916**	**95**	**0.16%**

*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 **7,916** new dengue cases since previous report in Singapore and Vietnam. The region reported **59,293** total cases and **95** total deaths in 2023 with **0.16%** CFR.

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Dengue

- **Vietnam:** Localities in the Mekong Delta, southern Vietnam have recorded a soaring number of dengue fever patients, though it is the dry season in the region.[1] In Can Tho City, more than 590 dengue fever cases, including one death in Co Do District, have been reported in the year to date, much higher than the year-ago figure of around 90 cases.[1] Most of the cases were detected in Ninh Kieu, Thot Not, Cai Rang, and Co Do Districts, according to the Can Tho Center for Disease Control (CDC).[1] In the provinces of Dong Thap and Tien Giang, the number of dengue fever patients has skyrocketed by 200-400 percent against the same period last year.[1] Data from CDC Tien Giang indicated that 713 dengue fever cases have been detected since the beginning of the year. Dong Thap Province has logged 333 dengue fever clusters in all districts, with 653 cases, up 2.8-fold versus last year's figure.[1] Cao Lanh, Thanh Binh, and Thap Muoi Districts accounted for the majority of cases. Similarly, A Giang witnessed a sharp increase of over 860 cases during the given period.[1] CDC leaders in these Mekong Delta provinces attributed the upsurge of dengue fever cases in the dry season to previous unseasonal rains, which caused dengue outbreaks.[1] The unseasonal rains led to stagnant water in lakes, ponds, and containers which became mosquito breeding sites.[1] Also, many local households stocked up on rainwater to serve farming and daily activities.[1] [Full article]

Measles Cases in ASEAN Region

From January 1 to March 21, 2023

Measles cases in ASEAN region

Country	Measles Cases	New Cases since the previous report	Deaths	Case Fatality Rate (CFR)
Brunei Darussalam	-	-	-	-
Cambodia	-	-	-	-
Indonesia	784	0	15	1.91%
Lao PDR	-	-	-	-
Malaysia	-	-	-	-
Myanmar	-	-	-	-
Philippines	141	8	-	0.00%
Singapore	3	0	-	0.00%
Thailand	-	-	-	-
Vietnam	-	-	-	-
Total	**928**	**8**	**15**	**1.62%**

*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 **8** new measles cases in since past week in the Philippines. The region reported **928** total cases and **15** total deaths in 2023 with **1.62%** CFR.

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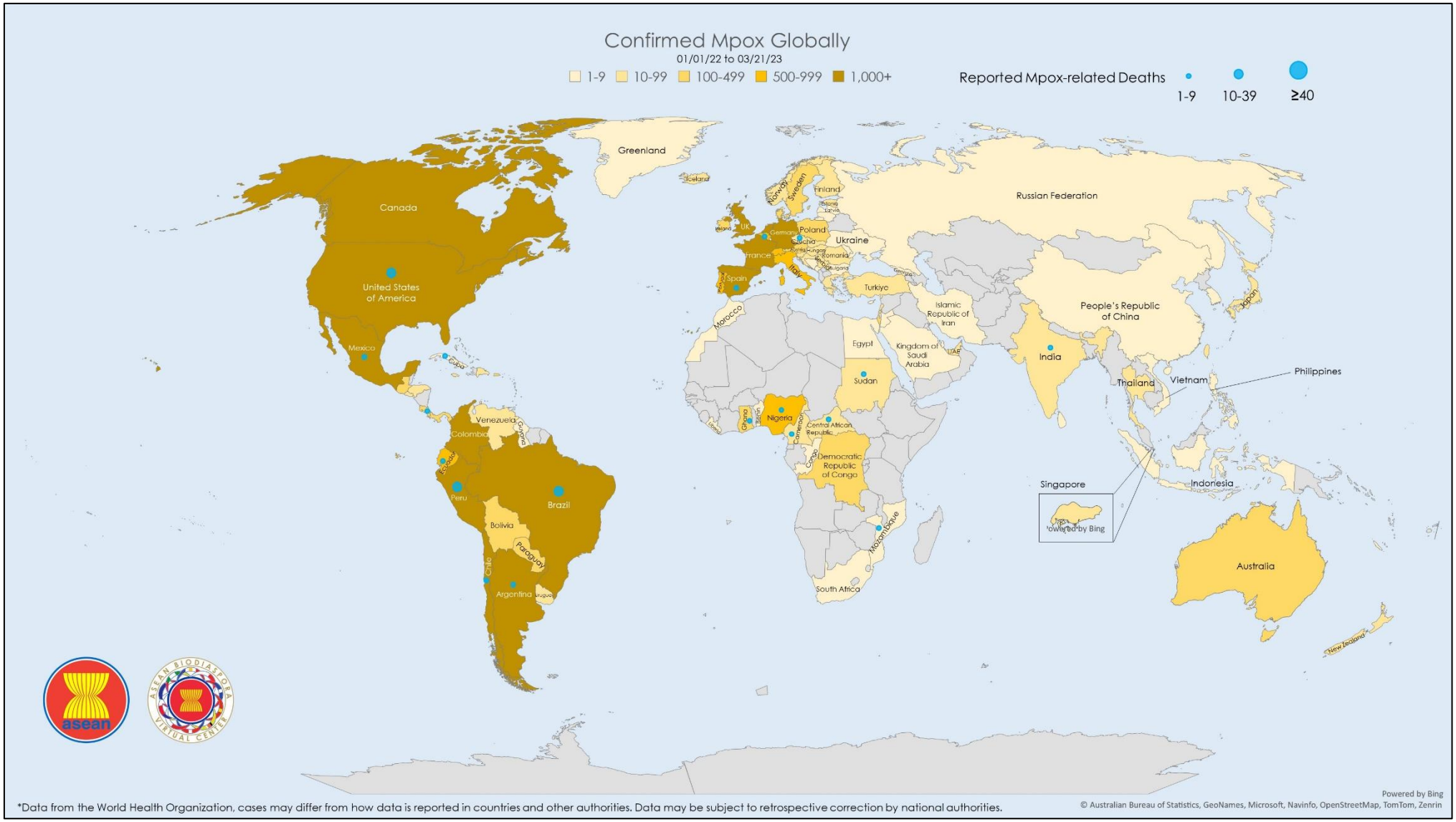
Measles

- **Philippines**: The Philippines has recorded a 541-percent increase in measles and rubella cases from January 1 to February 25 this year compared to the same period last year.[2] Based on the latest surveillance report by the Department of Health (DOH) epidemiology bureau, 141 cases of measles and rubella have been reported since the start of the year.[2] Of this number, 133 were measles cases, while eight were rubella.[2] Most of the cases were from the Zamboanga Peninsula (26), Metro Manila (25), and Calabarzon (20) regions.[2] Only the Bangsamoro Autonomous Region in Muslim Mindanao had no reported case.[2] Measles and rubella are two of the most common vaccine-preventable diseases among school-age children in the Philippines.[2] Meanwhile, the DOH has urged those who have to update their COVID-19 shots to get their booster or complete their primary series within their communities as vaccination remains within reach in barangay halls, local health centers, and schools.[2] [Full article]

Mpox (Monkeypox) Cases Reported Globally

as of March 21, 2023



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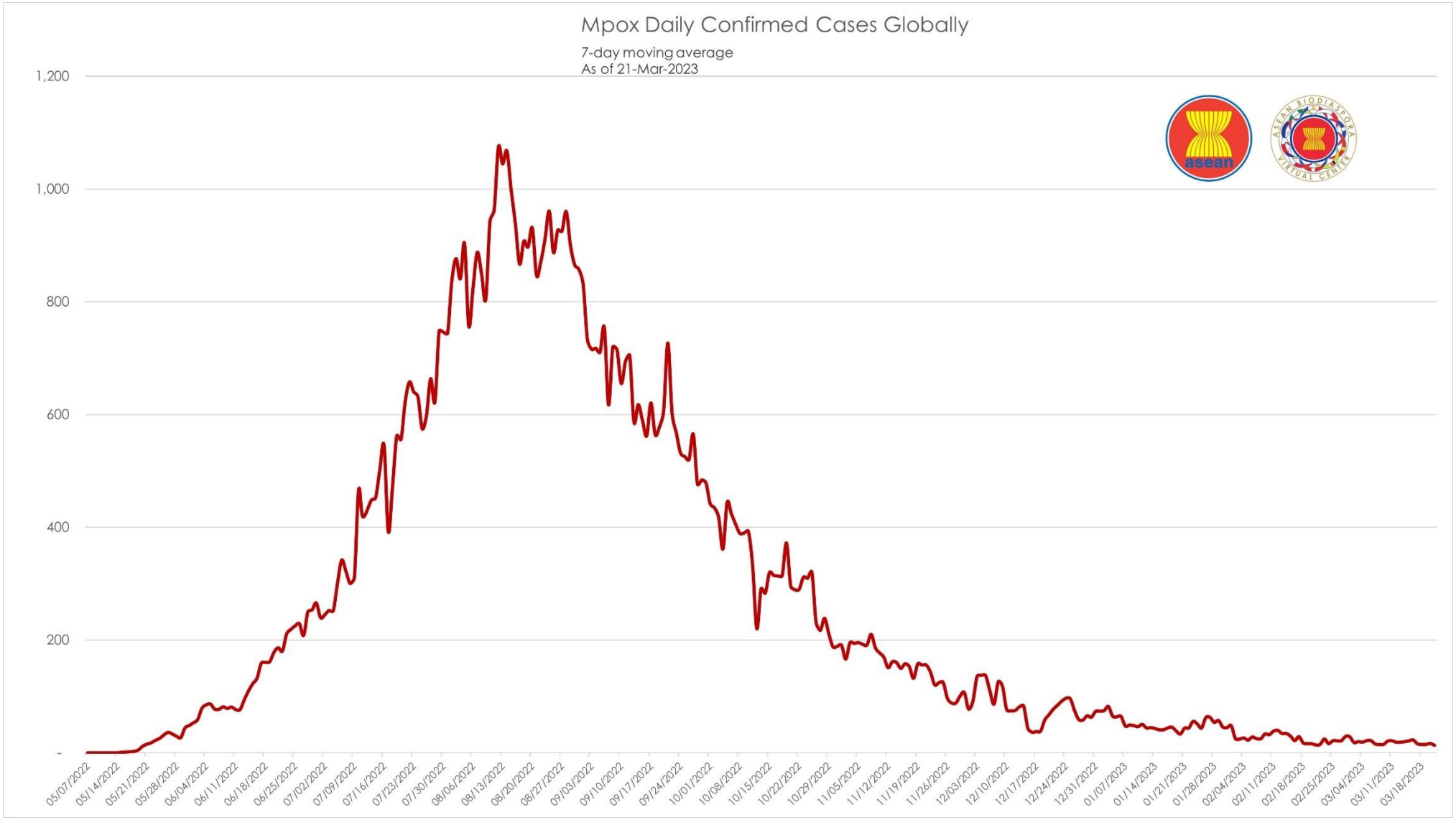
Mpox Daily Trend Globally

as of March 21, 2023



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Mpox: Highlights and Situation Overview

- As of 21 March 2023 (1PM, GMT+7), worldwide, there were **86,646** confirmed cases, including **112** deaths. Globally, Case Fatality Rate (CFR) was **0.13%.**
- **45 confirmed cases** in the ASEAN region**,** with CFR of **0%.**
- **86,601 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	21	-	-	0.00%
Thailand	17	1	-	0.00%
Vietnam	2	-	-	0.00%
ASEAN Total	**45**	**1**	**-**	**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	5.00%
Japan	59	13	-	0.00%
New Caledonia	1	-	-	0.00%
New Zealand	41	-	-	0.00%
People's Republic of China*	3	-	-	0.00%
Republic of China*	12	-	-	0.00%
Republic of Korea*	5	-	-	0.00%
Sri Lanka	2	-	-	0.00%
Asia-Pacific Total	**289**	**13**	**1**	**0.39%**

*People's Republic of China – China, Republic of China – Taiwan, Republic of Korea – South Korea

Top 5 countries with most mpox cases globally

Country	Total Cases	New Cases	Deaths	Case Fatality Rate (CFR)
United States of America	30,048	9	38	0.13%
Brazil	10,878	-	15	0.14%
Spain	7,546	3	3	0.04%
France	4,128	-	-	0.00%
Colombia	4,088	-	-	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	1,481	-	19	1.28%
AMERICAS	58,929	31	86	0.15%
ASEAN	45	1	-	0.00%
ASIA PACIFIC	289	13	1	0.35%
EUROPE	25,581	-	6	0.02%
MIDDLE EAST	321	-	-	0.00%
TOTAL	**86,646**	**45**	**112**	**0.13%**

Global Update

- **Japan**: Kanagawa Prefecture announced on the 16th that a man in his 20s living in the prefecture was infected with monkeypox.[3] He is recovering at home and is said to be in a stable condition.[3] The man has no history of traveling abroad.[3] This is the second confirmed case of infection in the prefecture, bringing the total number of confirmed infections in Japan to 46.[3] According to the prefectural government, the man developed a fever on the 3rd and developed a rash on the 5th.[3] After that, he had a high fever of nearly 40 degrees, so he visited a medical institution on the 13th.[3] When a sample was examined at a health research institute in the prefecture, it turned out to be positive on the 14th.[3] [Full article]

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