

COVID-19 and Mpox Situational Report in the ASEAN Region

- ASEAN BioDiaspora Virtual Center (ABVC)

ASSOCIATION OF SOUTHEAST ASIAN NATIONS



ASEAN BIODIASPORA VIRTUAL CENTER (ABVC)





GLOBAL PARTNERS













Table of Contents

COVID-19	
Highlights and Situation Overview	1
Global Update	1
Regional Update	1
Vaccine Update	1
Research Update	2
COVID-19 Cases and Deaths Table	4
COVID-19 Cases in ASEAN Region Table	4
COVID-19 Cases in Asia-Pacific Region Table	
Epi curve Among ASEAN Countries	
ASEAN Weekly New Cases and New Deaths	
Vaccination Status in ASEAN	
ASEAN Outlook Assessment	9
Mpox	10
Map of Mpox Cases Globally	10
Mpox Daily Trend Globally	
Highlights and Situation Overview	
Mpox Cases in ASEAN Region Table	
Mpox Cases in Asia-Pacific Region Table	
Top 5 Countries with Most Mpox Cases Globally	
Mpox Cases per Region	
References	1.4



COVID-19: Highlights and Situation Overview

Global Update

- Worldwide, there have been over 664 million cases and over 6 million deaths attributed to COVID-19.
- The Centers for Disease Control and Prevention (CDC) reported in its new variant estimates that XBB.1.5 Omicron subvariant is now dominant in the northwestern region, making it the most frequently detected type in all US regions. In the Northeastern part of the country, XBB.1.5 makes up nearly all of the samples. And it constitutes at least 75% of samples in other regions of the country. Furthermore, CDC reported that other subvariants are not increasing in prevalence. [Full article]
- The European Centre for Disease Prevention and Control reported in its latest update that Europe's COVID-19 indicators indicate that the region's COVID-19 situation continues to improve, however, some countries are reporting recent upticks in cases, especially in the older population. Meanwhile, according to UK's country's Health Security Agency (HSA), overall hospitalizations have increased and are still highest in those ages 85 and older. The HSA also added that the number of outbreaks increased slightly, with the highest number reported from nursing homes. Emergency department visits are up slightly, especially in people ages 65 and older. Furthermore, multiple variants continue to circulate, with BQ.1 making up 35.4%, CH.1.1 making up nearly 26%, and 23.5% characterized as XBB.1.5. [Full article]

Regional Update

- The **Philippines** recorded 142 new COVID-19 infections on February 19, according to statistics supplied by the Department of Health (DOH).⁵ According to GMA News Research, this is the country's fifth consecutive day with over 100 new cases, bringing the overall caseload to 4,075,524.⁵ The country currently has 9,182 active cases, a decrease from 9,188 on Saturday—the first decrease in three days.⁵ Recoveries were 4,000,321 (up 193 from the previous day), the most in four days.⁵ There were 13 more deaths reported, the most in three days after two days with less than ten, bringing the total fatalities to 66,021.⁵ [Full article]
- Singapore has reported the first fatality related to COVID-19 vaccination. A 28-year-old Bangladeshi man who died 21 days after his COVID-19 vaccine jab in 2021 has been recorded as Singapore's first fatality related to the vaccination. The State Coroner ruled on February 15 (Wednesday) that the man's death was a medical misadventure with myocarditis as the cause of death. According to the latest vaccine safety update by the Health Sciences Authority (HSA), MOH said the incidence of myocarditis remains rare with reporting rates of 0.1 per 100,000 doses (or 0.0001%) for the bivalent vaccines; and 1.1 per 100,000 doses (or 0.0011%) for the primary vaccination series of the monovalent vaccines. According to MOH, the Expert Committee on COVID-19 Vaccination and HSA will continue to monitor vaccine-related serious adverse events closely.

Vaccine Update

USA: As the public health emergency ends, the United States government will no longer
be providing vaccines for free. However, Moderna remains committed to ensuring that
people in the United States will have access to their COVID-19 vaccines regardless of
ability to pay. Moderna's COVID-19 vaccines will continue to be available at no cost for
insured people whether they receive them at their doctors' offices or local pharmacies.
For uninsured or underinsured people, Moderna's patient assistance program will



provide COVID-19 vaccines at no cost. Everyone in the United States will have access to Moderna's COVID-19 vaccine regardless of their ability to pay.

Research Update (Published and peer-reviewed studies)

- A randomized controlled trial involving a high-risk, unvaccinated population that was conducted before the Omicron variant emerged found that nirmatrelvir-ritonavir was effective in preventing progression to severe COVID-19.1 This cohort study, **Population**based evaluation of the effectiveness of nirmatrelvir-ritonavir for reducing hospital admissions and mortality from COVID-19, evaluated the effectiveness of nirmatrelvirritonavir in preventing severe COVID-19 while Omicron and its subvariants predominated.¹ Study population included all residents in Ontario who were older than 17 years of age and had a positive PCR test for SARS-CoV-2 between Apr. 4 and Aug. 31, 2022. Patients treated with nirmatrelvir-ritonavir were compared with patients who were not treated, as to the primary outcome of hospital admission from COVID-19 or all-cause death at 1-30 days, and a secondary outcome of all-cause death.¹ The final cohort included 177,545 patients, 8,876 (5.0%) who were treated with nirmatrelvir-ritonavir and 168,669 (95.0%) who were not treated. The occurrence of hospital admission or death was lower in the group given nirmatrelvir-ritonavir than in those who were not (2.1% v. 3.7%; weighted OR 0.56, 95% CI 0.47–0.67). For death alone, the weighted OR was 0.49 (95% CI 0.39–0.62). The findings were similar across strata of age, drug-drug interactions, vaccination status and comorbidities. The number needed to treat to prevent 1 case of severe COVID-19 was 62 (95% CI 43-80), which varied across strata. Nirmatrelvirritonavir was associated with significantly reduced odds of hospital admission and death from COVID-19, which supports use to treat patients with mild COVID-19 who are at risk for severe disease. [Full text]
- Bradycardia is a remdesivir infusion—associated AE listed in the US Food and Drug Administration- approved prescribing information.² This multicenter cohort study, Identification of Bradycardia Following Remdesivir Administration Through the US Food and Drug Administration American College of Medical Toxicology COVID-19 Toxic Pharmacovigilance Project, evaluated the magnitude and duration of bradycardic events following remdesivir administration.² Participants included patients hospitalized with COVID-19 at 15 medical centers across the US.² Patients excluded had AEs unrelated to bradycardia, AEs in addition to bradycardia, or first onset of bradycardia after 5 remdesivir doses.² Linear mixed-effect models for the minimum HR before starting remdesivir and within 24 hours of each dose included doses as fixed effects.² Baseline covariates were age (≥65 years vs < 65 years), sex (male vs female), cardiovascular disease history (yes vs no), and concomitant use of bradycardia-associated medications.² The interactions between variables and doses were considered fixedeffects covariates to adjust models.² Among 188 patients receiving remdesivir who had bradycardia, the most substantial decrease in heart rate occurred within 24 hours of the loading dose.² The median time to minimum heart rate was 60.7 hours after remdesivir administration.² Bradycardia in patients receiving remdesivir was seen during the infusion and after 1 or more doses; however, these findings are limited because a large proportion of patients had cardiac risk factors and/or severe COVID-19.2 [Full text]
- This study, **Past SARS-CoV-2 infection protection against re-infection: a systematic review and meta-analysis**, aimed to systematically synthesize studies to estimate protection from past COVID19 infection by variant and by time since infection.³ A total of 65 studies from 19 different countries were identified.³ Meta-analyses showed that protection from past infection and any symptomatic disease was high for ancestral, alpha, beta, and delta variants, but was substantially lower for the omicron BA.1 variant.³ Pooled effectiveness against re-infection by the omicron BA.1 variant was 45.3% (95% uncertainty interval [UI] 17.3–76.1) and 44.0% (26.5–65.0) against omicron BA.1



symptomatic disease.³ Mean pooled effectiveness was greater than 78% against severe disease (hospitalization and death) for all variants, including omicron BA.1.³ Protection from re-infection from ancestral, alpha, and delta variants declined over time but remained at 78.6% (49.8–93.6) at 40 weeks.³ Protection against re-infection by the omicron BA.1 variant declined more rapidly and was estimated at 36.1% (24.4–51.3) at 40 weeks.³ On the other hand, protection against severe disease remained high for all variants, with 90.2% (69.7–97.5) for ancestral, alpha, and delta variants, and 88.9% (84.7–90.9) for omicron BA.1 at 40 weeks.³ This is the first review to comprehensively assess natural immunity protection against COVID-19 re-infection by variant (primary infection and re-infection) and to evaluate waning immunity with time since primary infection.³ The scarcity of data on protection afforded by past infection from the omicron BA.1 variant and its sublineages (BA.2, BA.4, and BA.5) highlights the importance of continued assessment, particularly considering that an estimated 46% of the global population was infected by the omicron variant between Nov 15, 2021, and June 1, 2022.³ [Full text]

The study Antibiotic Receipt During Outpatient Visits for COVID-19 in the US from 2020 to 2022 by researchers of the University of Pittsburgh School of Medicine and Harvard Medical School found that the receipt of antibiotics for COVID-19-related outpatient visits was more common in adults than children and adolescents during the first 2 years of the pandemic.⁴ A total of 1,293,303 adult visits and 177,057 child and adolescent visits were included in the analysis using commercial health insurance claims data from COVID-19-related outpatient visits for people ages 0 to 64 years.⁴ Antibiotic receipt ranged from 4% in children ages 0 to 5 to 16% in adults ages 45 to 65, with roughly 12% of 6- to 17-year-olds and 25- to 44-year-olds receiving an antibiotic during a COVID-19related visit.4 COVID-19-related visits accounted for 20% of acute respiratory tract infection (ARTI)-related visits and 7% of ARTI-related antibiotic prescriptions.4 Researchers also presented that antibiotic receipt varied by site of care, with the highest rates observed in practice-based telemedicine and ED visits for all groups except ages 0 to 5; for that group, antibiotic receipt was highest in direct-to-consumer telemedicine visits.4 The antibiotic receipt also varied by region, with the highest rate seen in the South (15%), followed by the West (9%), Midwest (9%), and Northeast (7%).4 Amoxicillin was the most common antibiotic prescribed to children under 6 (37%), followed by azithromycin (36%), while azithromycin was more commonly prescribed to those ages 6 to 17 years and adults (68% and 70%, respectively) than amoxicillin (15% and 4%).4 According to the authors, increased antibiotic prescribing in adults may be linked to a higher prevalence of comorbidities and a higher risk of adverse outcomes from COVID-19—even though antibiotics aren't indicated for or effective against COVID-19.4 [Full text]

COVID-19 Cases and Deaths as of 20 February 2023

- As of 20 February 2023 (1PM, GMT+7), worldwide, there were 664,297,621 confirmed cases, including 6,774,714 deaths. Globally, Case Fatality Rate (CFR) was 1.2%.
- 35,591,233 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	Brunei Darussalam	10 Mar 20	19-Feb-23	276,825	-	225	-	63,890	450,404	445,929	338,987	99.3
REGION	Cambodia	27 Jan 20	19-Feb-23	138,708	2	3,056	-	841	15,244,858	14,609,937	10,433,215	87.1
	Indonesia	02 Mar 20	19-Feb-23	6,734,215	113	160,886	2	2,488	203,657,535	172,693,321	67,952,274	62.7
	Lao PDR	24 Mar 20	19-Feb-23	218,009	3	758	-	3,041	5,888,649	5,222,417		69.4
	Malaysia	25 Jan 20	19-Feb-23	5,041,007	186	36,956	1	15,778	28,125,245	27,536,657	17,056,957	81.1
	Myanmar	23 Mar 20	19-Feb-23	633,884	7	19,490	-	1,173	34,777,314	27,545,329	2,227,351	50.8
	Philippines	30 Jan 20	19-Feb-23	4,075,524	200	66,021	13	3,770	78,369,243	73,937,435	21,341,197	64.0
	Singapore	23 Jan 20	19-Feb-23	2,218,623	-	1,722	-	38,899	5,161,990	5,120,768	4,440,289	90.8
	Thailand	13 Jan 20	19-Feb-23	4,727,628	-	33,894	-	6,790	57,005,497	53,486,086	32,143,431	74.6
	Vietnam	23 Jan 20	19-Feb-23	11,526,810	4	43,186	-	11,950	90,450,881	85,848,363	57,452,750	87.4
		ASEAN CO	OUNTRIES	35,591,233	515	366,194	16	148,619	519,131,616	466,446,242	213,386,451	

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

COVID-19 cases in Asia-Pacific region

REGION	COUNTRY/ TERRITORY	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
ASIA-	Afghanistan	24-Feb-20	19-Feb-23	209,107	23	7,896	-	550	11,606,705	10,894,509		26.5
PACIFIC	Australia	25-Jan-20	15-Feb-23	11,334,920	-	19,063	-	44,191	22,236,871	21,655,312	19,762,423	82.7
REGION	Bangladesh	08-Mar-20	18-Feb-23	2,037,738	-	29,445		1,250	150,629,515	131,182,263	65,897,152	76.6
	Bhutan	05-Mar-20	14-Feb-23	62,611	-	21		8,205	699,116	677,669	634,641	86.6
	People's Republic of China*		19-Feb-23	13,314,259	15,933	36,353	0	81,298	1,339,608,531	1,304,575,996	214,031,616	89.7
	Cook Islands	17-Feb-22	17-Feb-23	7,025	-	2	-	32,846	15,084	14,715	10,209	86.4
	Fiji	18-Mar-20	17-Feb-23	68,876	-	883	-	7,739	711,686	640,712	170,632	68.9
	French Polynesia	12-Mar-20	04-Jan-23	77,957	-	649	-	27,913	190,765	186,059	112,237	60.8
	Guam	15-Mar-20	17-Feb-23	60,943	-	418	-	36,429	158,611	144,042		85.5
	India	30-Jan-20	19-Feb-23	44,684,917	142	530,760	3	3,270	1,027,279,394	951,464,506	224,093,416	67.1



Japan	16-Jan-20	19-Oct-22	21,858,528	-	46,014	-	17,312	104,612,252	103,222,040	169,610,887	83.
Kiribati	25-Jan-22	15-Feb-23	5,012	-	18	-	4,262	96,184	73,888	23,419	56.
Maldives	07-Mar-20	14-Feb-23	185,723	-	311	-	34,979	399,151	385,081	167,187	73.
Marshall Islands	26-Oct-20	17-Feb-23	15,598	-	17	-	26,531	43,310	34,694		44.
Micronesia	11-Jan-21	23-Jan-23	23,671	-	60	-	20,798	84,729	71,253		69.
Mongolia	10-Mar-20	17-Feb-23	1,007,895	_	2,179	-	31,251	2,272,965	2,175,617	1,044,337	64
Nepal	24-Jan-20	18-Feb-23	1,001,133	-	12,020	-	3,499	27,678,479	24,159,118	8,951,403	79
New Caledonia	17-Mar-20	31-Jan-23	79,845	-	314	-	27,743	192,229	184,660	101,849	63
New Zealand	28-Feb-20	13-Feb-23	2,199,579	-	3,839	-	44,734	4,300,097	4,138,926	3,523,903	79
Niue	03-Sep-21	18-Feb-23	<i>77</i> 1	-	-	-	35,596	1,636	1,634	1,224	83
Northern Mariana Islands	28-Mar-20	17-Feb-23	13,605	-	41	-	23,778	46,567	43,873		84
Pakistan	26-Feb-20	19-Feb-23	1,576,688	30	30,641	-	728	154,665,740	131,368,973	49,551,181	55
Palau	31-May-21	14-Feb-23	5,988	-	9	-	33,252	20,750	18,497		85
Papua New Guinea	21-Mar-20	15-Feb-23	46,792	-	670	-	533	369,998	310,717	32,384	3
Samoa	18-Nov-20	19-Feb-23	16,594	192	29	-	8,419	191,171	177,741	79,360	79
Solomon Islands	03-Oct-20	24-Nov-22	24,575	_	153	-	3,669	343,821	254,352	27,783	35
Republic of Korea**	20-Jan-20	19-Feb-23	30,429,571	10,274	33,856	12	58,848	44,867,046	44,448,105	41,325,954	85
Sri Lanka	27-Jan-20	17-Feb-23	672,018	-	16,829	-	3,082	17,143,761	14,752,827	8,220,002	67
Timor Leste	21-Mar-20	16-Feb-23	23,418	-	138	-	1,811	878,845	790,466	315,249	58
Tonga	05-Nov-21	17-Feb-23	16,801	-	13	-	16,078	91,949	77,464	38,331	72
Türkiye	10-Mar-20	12-Dec-22	17,041,315	-	101,487	-	20,426	57,941,051	53,176,961	41,425,329	62
Vanuatu	11-Nov-20	06-Jan-23	12,014	-	14	-	4,006	144,824	131,697	16,996	40
Wallis et Futuna	17-Oct-20	31-Dec-22	3,427	-	7	-	21,385	7,150	6,803	3,766	58
·		ASIA PACIFIC	148,118,914	26,594	874,149	15	686,411	2,969,529,983	2,801,441,170	849,172,870	

^{*}Includes cases from Hong Kong (SAR), Macau (SAR), and Taiwan (Province of China).

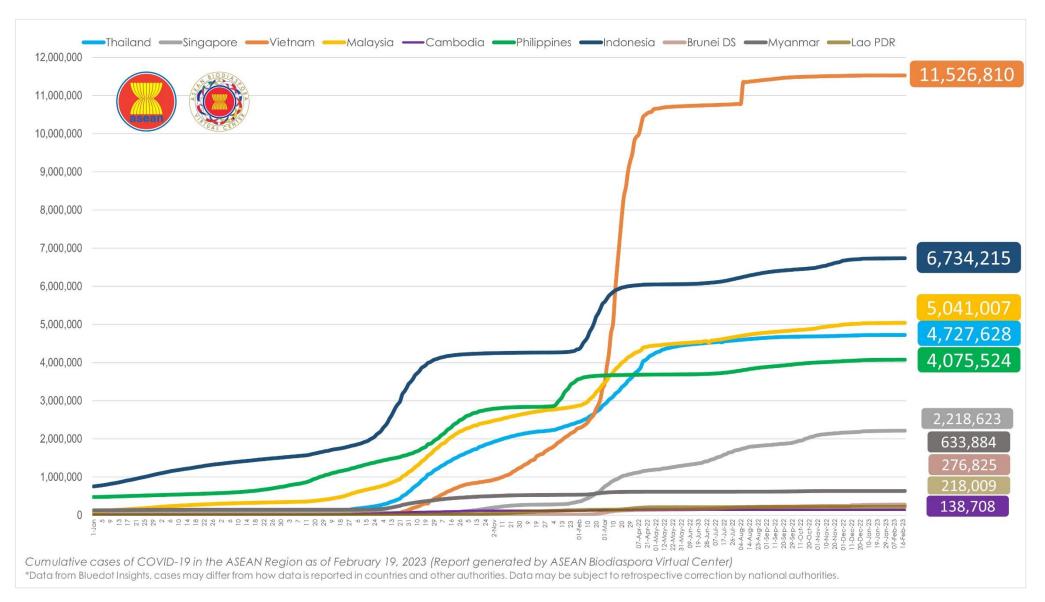
• 480,587,474 confirmed cases of COVID-19 have been reported in other 4 regions (other than ASEAN and Asia-Pacific countries):

REGION	TOTAL CONFIRMED CASES	NEW CASES	TOTAL DEATHS	NEW DEATHS	CUMULATIVE CASES/ 100,000	CUMULATIVE VACCINATED	CUMULATIVE FULLY VACCINATED	CUMULATIVE BOOSTERED
AFRICA	13,049,098	207	259,515	-	248,923	484,058,451	398,811,838	66,003,692
AMERICAS	193,193,968	1,623	2,962,072	18	1,241,801	835,447,892	731,893,384	495,237,137
EUROPE	251,631,483	18,673	2,073,011	53	2,112,067	569,620,774	541,040,894	383,756,585
MIDDLE EAST	22,712,925	677	239,773	16	216,065	144,725,560	130,012,483	60,203,464
TOTAL	480,587,474	21,180	5,534,371	87	3,818,855	2,033,852,677	1,801,758,599	1,005,200,878

^{**}Republic of Korea – South Korea

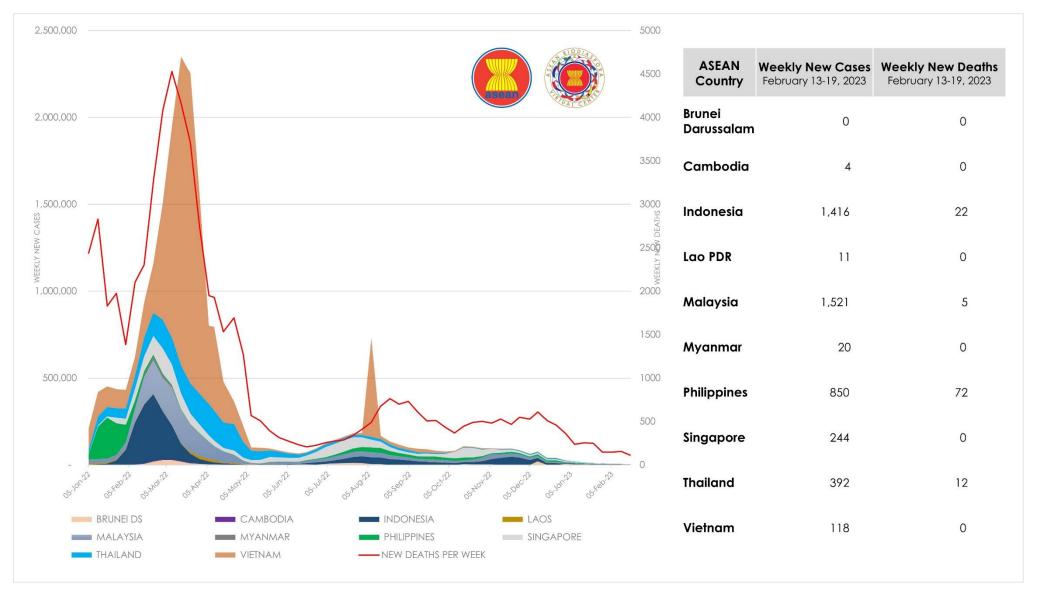
COVID-19 Epi curve among ASEAN Countries:

From January 1, 2022 to February 19, 2023



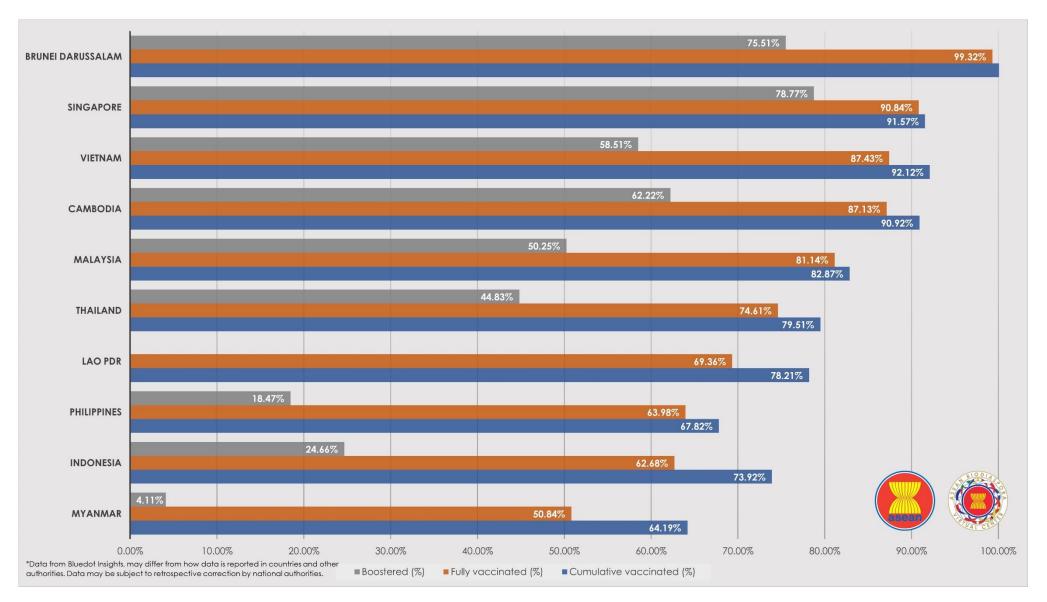
ASEAN Weekly COVID-19 New Cases and New Deaths

From January 1, 2022 to February 19, 2023



ASEAN COVID-19 Vaccination Status

as of 19 February 2023



ASEAN COVID-19 Outlook Assessment

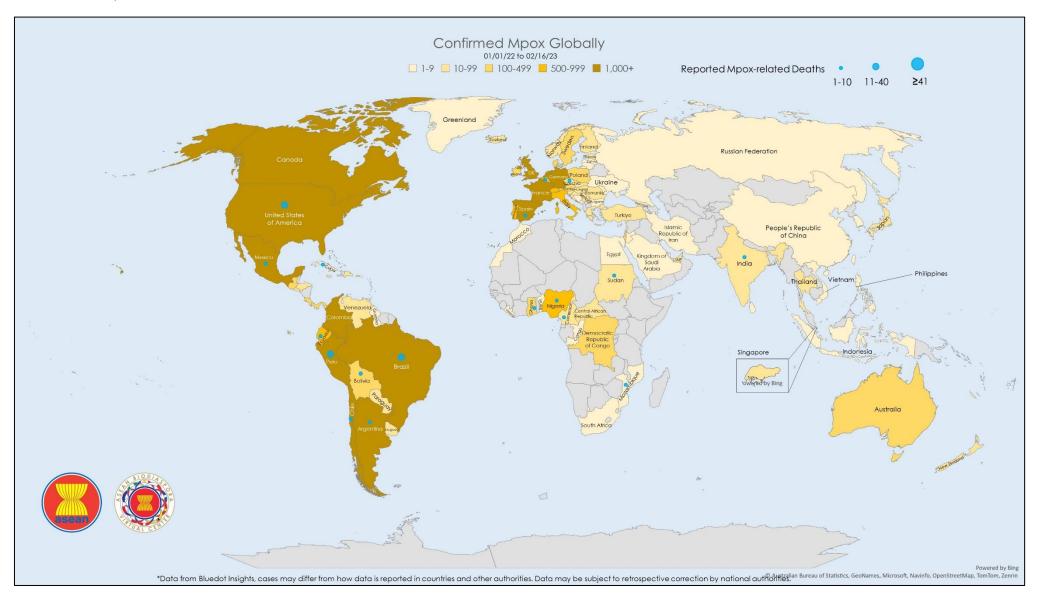
as of 17 February 2023

ASEAN MEMBER STATE	immunity to COVID-19; eit 19 or have been vaccinate	population has a level of her recovered from COVID- ed with at least one dose of 19 vaccine.	Case levels are generally low (a 7-day rolling average number of daily new cases that is <10 cases per 100,000, with each day's past-14-day test positivity is consistently <5%).	Government Policy on containment and health (strictness and comprehensiveness in COVID-19 related government policies)	
	% of Total population fully vaccinated / boosted	Population vaccinated/ day (7-day average)	Daily cases/ 100,000	Containment and health index score - Oxford COVID-19 Government Response Tracker (OxCGRT)	
Brunei Darussalam	≥90.0/75.5	Unknown	24.99	31.0/100	
Cambodia	≥90.0/62.2	Unknown	0.01	31.5/100	
Indonesia	66.1/24.7	Unknown	0.08	54.2/100	
Lao PDR	77.3/ND	Unknown	0.02	61.6/100	
Malaysia	84.5/50.3	0%/day	0.69	51.8/100	
Myanmar	52.1/4.1	Unknown	0.006	69.1/100	
Philippines	71.6/18.5	Unknown	0.13	55.4/100	
Singapore	≥90.0/78.8	Unknown	4.86	58.9/100	
Thailand	77.7/44.8	Unknown	0.08	31.5/100	
Vietnam	≥90.0/58.5	Unknown	0.01	43.5/100	

All of the countries have achieved the Population vaccinated/ day (7-day average) except Vietnam.

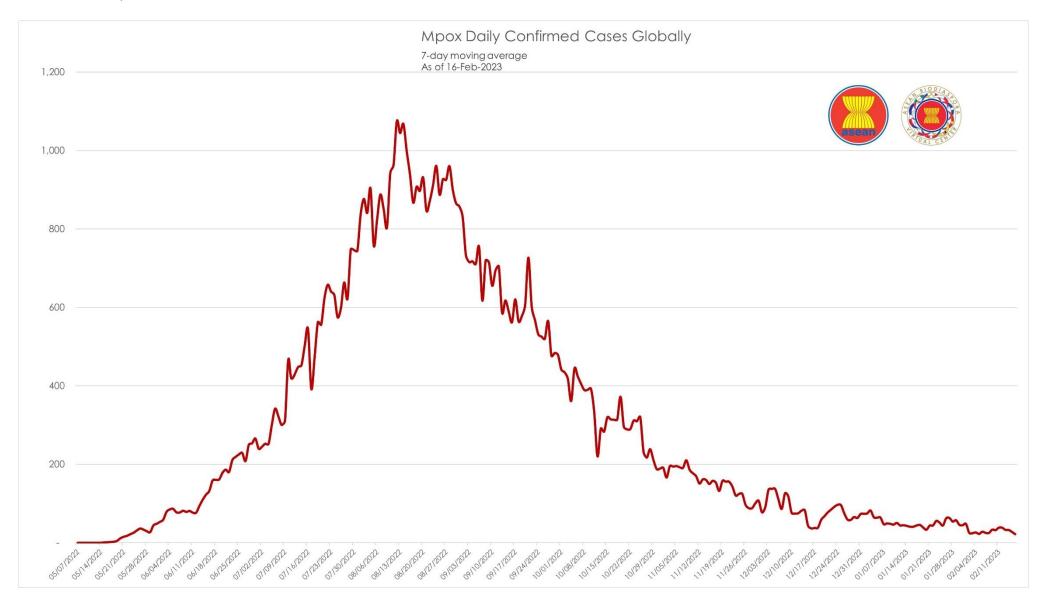
Mpox (Monkeypox) Cases Reported Globally

as of February 16, 2023



Mpox Daily Trend Globally

as of February 16, 2023





Mpox: Highlights and Situation Overview

- As of 20 February 2023 (1PM, GMT+7), worldwide, there were **85,918** confirmed cases, including **92** deaths. Globally, Case Fatality Rate (CFR) was **0.11%**.
- 43 confirmed cases in the ASEAN region, with CFR of 0%.
- 85,875 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	15	-	-	0.00%
Vietnam	2	-	-	0.00%
ASEAN Total	43	-	-	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	20	-	-	0.00%
New Caledonia	1	-	-	0.00%
New Zealand	41	-	-	0.00%
People's Republic of China*	7	-	-	0.00%
Republic of Korea	4	-	-	0.00%
Sri Lanka	2	-	-	0.00%
Asia-Pacific Total	241	-	1	0.42%

^{*}People's Republic of China - including Hongkong (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	29,974	-	28	0.09%
Brazil	10,808	-	15	0.14%
Spain	7,538	-	3	0.04%
France	4,128	-	-	0.00%
Colombia	4,080	-	-	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	1,374	-	17	1.24%
AMERICAS	58,373	51	69	0.12%
ASEAN	43	-	-	0.00%
ASIA PACIFIC	241	1	1	0.41%
EUROPE	25,566	7	5	0.02%
MIDDLE EAST	321	-	-	0.00%
TOTAL	85,918	59	92	0.11%



References

- 1. Schwartz, Kevin L., et al. "Population-Based Evaluation of the Effectiveness of Nirmatrelvir–Ritonavir for Reducing Hospital Admissions and Mortality from Covid-19." Canadian Medical Association Journal, vol. 195, no. 6, 13 Feb. 2023, https://doi.org/10.1503/cmaj.221608.
- 2. Devgun, Jason M., et al. "Identification of Bradycardia Following Remdesivir Administration through the US Food and Drug Administration American College of Medical Toxicology Covid-19 Toxic Pharmacovigilance Project." *JAMA Network Open*, vol. 6, no. 2, 14 Feb. 2023, https://doi.org/10.1001/jamanetworkopen.2022.55815.
- 3. Stein, Caroline, et al. "Past SARS-COV-2 Infection Protection against Re-Infection: A Systematic Review and Meta-Analysis." *The Lancet*, 16 Feb. 2023, https://doi.org/10.1016/s0140-6736(22)02465-5.
- 4. Wittman, Samuel R., et al. "Antibiotic Receipt during Outpatient Visits for Covid-19 in the US, from 2020 to 2022." JAMA Health Forum, vol. 4, no. 2, 17 Feb. 2023, https://doi.org/10.1001/jamahealthforum.2022.5429.
- 5. "Philippines Logs 142 New COVID-19 Infections." GMA News Online, GMA News Online, 19 Feb. 2023, https://www.gmanetwork.com/news/topstories/nation/861341/philippines-logs-142-new-covid-19-infections/story/.



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