

Morbidity and Mortality Weekly Report in the ASEAN Region

Infectious Diseases

August 21, 2023 | MMWR 2023-33 Epidemiological Week 33









GLOBAL PARTNERS







Korea Disease Control and Prevention Agency





Editorial

CONSULTANTS ASEAN SECRETARIAT Assistant Director and Head of Health Division Human Development Directorate Ferdinal Fernando, MD

Programme Coordinator for Mitigation for Biological Threats (MBT) Phase 2 Michael Glen, MSSc

EDITORIAL TEAM Editor-in-Chief Abdurrahman, MPH

Managing Editor Gian Rei Mangcucang, MIH, EMT-B, RN

Associate Editor Aldilas Achmad Nursetyo, MSc, MD

Section Editor Nur Ismi Hamid

Technical Support Team Socorro Lupisan, MSc, MD Pebbles Grayle Tamayo John Rey Pablo

PUBLISHER ASEAN Biodiaspora Virtual Center

EDITORIAL ADDRESS ASEAN Biodiaspora Virtual Center, 2/F Ministry of Health, Jl. H.R. Rasuna Said, Blok X5, Kav. 4-9, Jakarta Selatan, Jakarta, Indonesia

E-mail: support@biodiaspora.org Weekly Issue

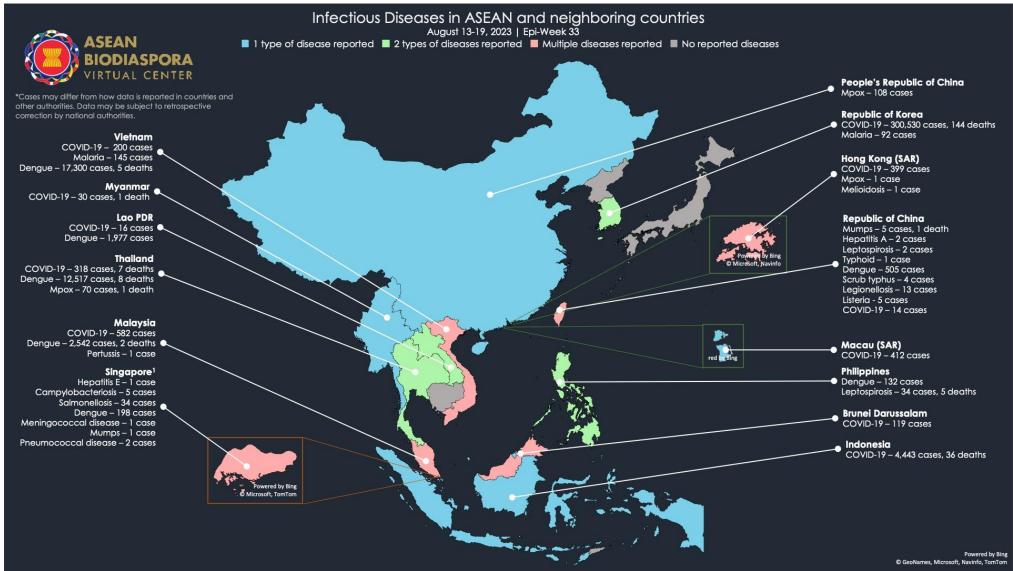


Table of Contents

Infectious Diseases	1
Infectious Diseases Map in ASEAN Region and Neighboring Countries	1
Infectious Disease Global Updates	2
Malaria	2
Measles	2
Dengue	2
Rabies	3
Infectious Disease Updates in the ASEAN Region	4
Pertussis	4
Hand, Foot, and Mouth Disease (HFMD)	4
Vector-Borne Diseases	5
Dengue	6
Dengue Cases in ASEAN Region Map	6
Dengue Cases in ASEAN Region Table	6
Dengue Risk Assessment	7
Dengue Narrative Report	7
Malaria	9
Malaria Cases in ASEAN Region Map	9
Malaria Cases in ASEAN Region Table	9
<u>Malaria Narrative Report</u>	10
Vaccine-Preventable Diseases	
Diphtheria	12
Diphtheria Cases in ASEAN Region Map	
Diphtheria Cases in ASEAN Region Table	12
Diphtheria, Tetanus Toxoid and Pertussis Vaccination Coverage in the ASEAN Region	13
Measles	14
Measles Cases in ASEAN Region Map	
Measles Cases in ASEAN Region Table	14
Measles Vaccination Coverage in the ASEAN Region	15
Rabies	16
Rabies Cases in ASEAN Region Map	16
Rabies Cases in ASEAN Region Table	16
Rabies Narrative Report	17
References	18

Reported Infectious Diseases in the ASEAN Region and Neighboring Countries

Epidemiological Week 33 | August 13-19, 2023



1. Ministry of Health Singapore, "Weekly Infectious Diseases Bulletin," Ministry of Health, August 19, 2023, https://www.moh.gov.sg/resources-statistics/infectious-disease-statistics/2023/weekly-infectious-disease-sbulletin.



Reported Infectious Diseases

Epidemiological Week 33 | August 13-19, 2023

Infectious Disease Global Updates

Malaria

- United States: A Maryland resident has been hospitalized with a positive case of locally acquired malaria, a mosquito-borne disease caused by a parasite (Maryland DOH, 2023). The Maryland Department of Health is taking the situation seriously and is working with local and federal health officials to investigate the case. Malaria is a dangerous and potentially fatal disease, with over 2,000 cases reported annually in the U.S., with most cases occurring in people returning from international travel. Early treatment reduces the chances of complications, and the risk to the public remains very low. [Full article]
- **Republic of Korea:** The Korea Centers for Disease Control and Prevention reported a rapid increase in domestic malaria cases from January 1 to August 18, with the number increasing by 17 compared to the previous day (Lee, 2023). By the 14th, the day before Liberation Day, the number increased by 17 compared to 509. Until the 17th, the day before, there were 518 people . is increasing at a very rapid rate. Malaria, an infectious disease transmitted by mosquitoes, infects 200 to 300 million people and kills millions each year. It mainly occurs in tropical regions, with Triune Fever Malaria occurring in Korea. Malaria, known since the time of Hippocrates, is transmitted through male and female mosquitoes mate before entering the wintering season. Male mosquitoes die, while females hide and lay eggs in the spring. Professor Emeritus Chae Jong-il of Seoul National University emphasized three factors to combat malaria: finding and treating patients thoroughly, getting rid of mosquitoes, and not being bitten by mosquitoes. However, finding and treating all patients is nearly impossible, and eradicating mosquitoes is difficult. Prevention is crucial, and personal defense and taking preventive medicine are recommended. [Full article]

Measles

• **Republic of Korea:** South Korea is expected to downgrade COVID-19's infection level to the lowest category, similar to seasonal flu, to lift antivirus curbs and return to prepandemic normalcy (Jae-eun, 2023). Currently, the virus is classified as Class 2, similar to chickenpox or measles. Health authorities plan to announce the downgrade on Wednesday. The timing of the adjustments could change depending on government and expert decisions. The rate of new infections has slowed down since July, and the fatality rate remains low at 0.03%. [Full article]

Dengue

• WHO: Dengue fever, a severe viral illness transmitted by mosquitoes, has increased globally, with the World Health Organization estimating half of the global population at risk. International SOS reported a 15% increase in dengue-related information requests in the first half of 2023 compared to 2022 (Dolare, 2023). India is particularly affected, with over 233,251 cases reported in 2022 alone. Dr. Vikram Vora, Medical Director at International SOS, emphasized the importance of widespread awareness and prevention to minimize the impact of dengue on individuals and communities. Mitigation measures include education campaigns, keeping premises free of mosquito breeding areas, providing mosquito-bite prevention supplies, and ensuring predeployment health assessments for travelling workforce. [Full article]



- United States: Florida has placed two counties under a mosquito-borne illness alert due to five dengue cases in less than a month (Team, 2023). The state has reported 11 locally acquired dengue cases this year, with 204 travel-associated cases. Common symptoms include fever, headache, eye pain, rash, nausea, vomiting, and unusual bleeding. [Full article]
- The **Bahamas** Ministry of Health & Wellness has confirmed three positive cases of Dengue Fever in New Providence (McKenzie, 2023). The disease is spread by the Aedes aegypti mosquito, which lives in objects with standing water. The ministry advises people to cover water storage receptacles, check potted plants, and ensure screens are intact. Symptoms include headache, fever, nausea, vomiting, rash, aches, and pains. The National Communicable Disease Surveillance Unit and DEHS are actively monitoring the situation and implementing preventive measures, including regular fogging. [Full article]
- India: Monsoon brings various ailments, including dengue, typhoid, malaria, and jaundice (Rizwan, 2023). Dengue cases are increasing in Indian cities, including Kerala, Odisha, Assam, Tamil Nadu, Maharashtra, West Bengal, and Karnataka. Heavy rains and floods also contribute to the problem. Experts warn that precautions must be taken to prevent further spread. [Full article]
- **Guyana** has activated a technical working group (TWG) to address the country's increasing dengue cases, with 2,169 confirmed cases this year and 11 deaths (The Gleaner, 2023). The Ministry of Health reports that 239 patients are hospitalized, and dengue is endemic to Guyana and the Americas region. The region has seen a significant increase in dengue cases, with 2,102,848 cases from January to June 2023, with 3,210 classified as severe dengue and 876 deaths. The TWG will assess, recommend, and implement actions to mitigate the public health event, including a public awareness campaign on environmental sanitation and hygienic practices. [Full article]
- **Bangladesh** is grappling with a higher death toll from dengue this year, with officials warning that the death toll this month could break records (Borneo Bulletin, 2023). The 2023 death toll from the mosquito-borne illness has reached 364 in the south Asian country, with over 78,000 people infected since January. In the first 10 days of August, over 23,000 people were diagnosed with dengue, compared to 43,854 cases in July. Over 100 people have died so far this month, over a third as many deaths from the illness during all of last year. Dengue causes flu-like symptoms that most people recover from but can rapidly lead to internal bleeding, organ failure, and even death. There is generally no specific treatment for the disease, but vaccines are available. Experts suggest that the monsoon season could exacerbate the outbreak in the country of over 160 million people. [Full article]

Rabies

• United States: A rabid bat has been identified in Howell, Michigan, marking the first case of rabies in an animal in Livingston County this year (Jordan, 2023). The Livingston County Health Department (LCHD) warns that bats are more active this time of year, increasing the possibility of exposure to rabies. Wildlife biologist John DePue with the Michigan Department of Natural Resources explains that bats are more likely to fly around during the day and are still learning their way around the world. If a bat is found in your home or bitten or scratched by one, do not let it go. The bat should be tested for rabies and sealed up to keep them out. Rabies is a deadly but preventable disease that can spread through bites or scratches from infected animals. People and domestic animals should avoid contact with bats and contact LCHD if they have been bitten or exposed to a bat. [Full article]



• India: A girl, Kiratjot Kaur, died after being administered wrong injections at Guru Nanak Dev Hospital in Amritsar due to negligence by hospital authorities (Kohli, 2023). The girl, who was bitten by a stray dog and had rabies infection, was admitted after fainting and dying shortly after. The girl's parents demanded justice and registered the case against the hospital staff. The hospital administration denied the child's illness and the doctor questioned why they gave the wrong injection. [Full article]

Infectious Disease Updates in the ASEAN Region

Pertussis

• **Malaysia:** A pertussis case has been reported in Kampung Bahagia, Rompin, with a mother and her two children (Bernama, 2023b). The Rompin District Health Office has increased prevention and control activities, including health education through ceramah, pamphlet distribution, and social media dissemination. The state health department will continue monitoring the situation and implementing control and prevention measures against the spread of the disease. Whooping cough, commonly spread by Bordetella pertussis bacteria, can infect people of all ages, but infants and children are most at risk. [Full article]

Hand, Foot, and Mouth Disease (HFMD)

• Vietnam: Ho Chi Minh City has reported 2,145 hand, foot, and mouth disease (HFMD) cases in the past week, with a total of 20,116 cases from the beginning of the year to August 19 (Son, 2023). Hospitals are treating 330 HFMD cases, with 329 under 6 years old accounting for 99.6%. [Full article]

Vector-Borne Diseases





Dengue Cases in the ASEAN Region

From January 1 to August 19, 2023 (Epi-Week 33)



Dengue cases in the ASEAN region

Country	Epi-Week Reported	Cumulative Dengue Cases	New Cases Since the Previous Report	Deaths	Case Fatality Rate (CFR)
Brunei Darussalam	-	-	-	-	-
Cambodia ⁵	Week 30	11,824	5,141	32	0.27%
Indonesia ⁶	Week 32	56,185	4,443	409	0.73%
Lao PDR ⁵	Week 31	16,413	8,238	12	0.07%
Malaysia ⁵	Week 31	71,193	14,472	49	0.07%
Myanmar ¹	Week 28	6,685	0	30	0.45%
Philippines ³	Week 28	80,318	5,088	299	0.37%
Singapore ⁴	Week 32	5,566	193	0	0.00%
Thailand ²	Week 27	27,235	0	1	0.003%
Vietnam⁵	Week 31	57,698	11,040	14	0.02%
Total		333,117	48,615	846	0.25%

2. 3.

BlueDot Developer Portal, accessed August 21, 2023, <u>https://developer-portal.bluedot.global/</u>. Asian Dengue Voice and Action, "Asian Dengue Dashboard," accessed August 21, 2023, <u>https://www.adva.asia/asian-dengue-dashboard/</u>. Department of Health Website, accessed August 21, 2023 "Statistics," July 15, 2023, <u>https://doh.gov.ph/statistics</u>. National Environment Agency (NEA), accessed August 21, 2023. Dengue cases, August 12, 2023, <u>https://www.nea.gov.sg/dengue-zika/dengue/dengue-cases</u>. 4.

WHO WPRO, "Dengue," World Health Organization, accessed August 14, 2023, https://www.who.int/westernpacific/emergencies/surveillance/dengue. 5.

Ministry of Health Indonesia

*Data were updated and collected from official sources, which may have a 2-4 weeks delay in reporting. Data must be interpreted cautiously.

The ASEAN region reported 48,615 new dengue cases in Cambodia, Indonesia, Lao PDR, • Malaysia, the Philippines, Singapore, and Vietnam since the previous report. The region reported 333,117 total cases and 846 total deaths in 2023 with 0.25% CFR.



	Country	Vector Density (mosquitoes/house)			Case Fatality Rate	Wolbachia Mosquito Program	Dengue Vaccine	Environment Control	Risk Level*	Confidence Level*
	Urban	Rural	-	Kale	(WMP)		Program			
Brunei10	0	-10	Unknown	Unknown	Unknown	Unknown	Unknown	Moderate to High	Low	
Cambodia1	100-200	10-20	69.78	0.27%	No	No	Yes	High to Very High	Medium	
Indonesia ²	50-100	10-20	20.24	0.73%	Yes	Yes	Yes	Moderate to High	High	
Lao PDR⁵	100-200		215.00	0.07%	No	No	Yes	High to Very High	Medium	
Malaysia ⁶	100-200	10-20	207.51	0.07%	No	No	Yes	High to Very High	Medium	
Myanmar ⁷	100-200	10-20	12.25	0.45%	No	No	Yes	High to Very High	Low	
Philippines ³	100-200	10-20	68.45	0.37%	No	No	Yes	High to Very High	High	
Singapore ⁸	0	-12	92.54	0.00%	Yes	Yes	Yes	Low to Moderate	High	
Thailand ⁴	50-100	10-20	37.93	0.003%	No	Yes	Yes	Low to Moderate	Medium	
Vietnam ⁹	100-200	10-20	58.36	0.02%	Yes	No	Yes	Moderate to High	Medium	

Dengue Risk Assessment

efferences: [] Svaraman, V., Son, N. H., Chhim, S., Bun, N. S., & Nhem, S. (2014). High urban Aedes aegypti mosquito density in Cambodia: implications for dengue control. PLoS neglected tropical diseases, 4(1), e618. [] Handyor, R., Kartono, K., Sulshyawati, E., & Suroso, S. (2015). Aedes aegypti mosquito density in urban and rural areas of Yogyrakarta, Indonesia. BioMed research international, 2015. [] Reves, M., Liograr, M. B., Macatangay, D. & Garcia, M. C. (2017). Aedes aegypti mosquito density and tarval indices in stelect areasianhia areas of Togyma (H). Devao del Norte, Philippines, Phi

medicine and public health. 48(1).

4. m. T.M., Lwin, H.T., & Oo, Y.S. (2018). Aedes aegyptilarval and adult indices in urban and rural areas in Yangon, Myanmar. Southeast Asian journal of tropical medicine and public health, 49(6), 1296-1302. ng, J.Y., Lim, C. H., & Tan, L.F. (2020). Aedes aegyptilarval and adult indices in Singapore in 2019. Southeast Asian journal of tropical medicine and public health, 49(6), 1296-1302. N. T., Hoong, T. Y., Van, T. H. H., & Nguyen, T. M. (2019). Aedes aegyptilarval and adult indices in urban and rural areas of Ha Chi Minh (FU). Yleiham. Southeast Asian journal of tropical medicine and public health, 48(1), 118-125. shamed, N. H., Sulaiman, A. S., & Hashim, A. (2017). Aedes aegyptilarval and adult indices in Brunei Darussalam in 2016. Southeast Asian journal of tropical medicine and public health, 48(1), 118-126.

*Risk level and confidence level based on Rapid Risk Assessment of Acute Public Health Events of the World Health Organization (WHO), 2012.

Dengue

- Lao PDR: Dengue fever cases in Laos have reached 20,936 since January, with 14 deaths, according to the Lao Ministry of Health (Xinhua, 2023). The highest number of cases was reported in Oudomxay province, with 4,161 cases reported. The disease spreads auickly among unsanitary conditions near stagnant water, where mosquitoes thrive. The Lao Ministry of Health urges people to remain vigilant, especially during rainy seasons, when dengue-spreading mosquitoes increase due to stagnant water accumulation. Health officials and medical staff are working to raise public awareness of the disease's danger. [Full article]
- Malaysia: Dengue fever cases in Kelantan have increased by 225%, with two deaths recorded between January and August 2023. The Director of Kelantan State Health Department (JKNK), Datuk Dr. Zaini Hussin, reported 1,514 cases as of 12 August 2023, with hot spots in Kota Bharu, Bachok, and Tumpat. Rainy weather and drought are believed to be contributing factors to the increase in cases (Wahid, 2023). However, the number of cases was lower than before the Covid-19 pandemic, with a 50% decrease compared to 2020 and a 52.2% decrease compared to 2019. JKNK carries out control and prevention activities to break the chain of infection, including inspection of premises, fog spray, removal of breeding grounds, and health education. [Full article]
- **Philippines:** Dengue cases in the Philippines have increased due to recent typhoons, • with 9,877 reported from July 2 to 15 (Villanueva, 2023). The highest increase was in llocos, Cagayan Valley, Mimaropa, Bicol, Western Visayas, Central Visayas, and Eastern Visayas, which were affected by Typhoons Egay and Falcon. The Department of Health warns that cases may continue to rise due to late reports and heavy rainfall and flooding. Health authorities also warn of an outbreak of leptospirosis due to increased heavy rain and flooding. [Full article]

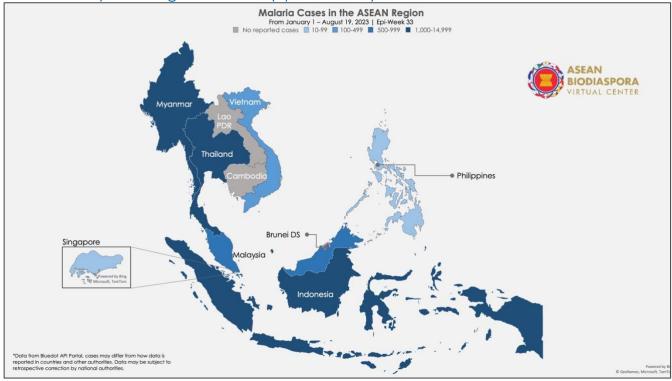


• Vietnam: Ho Chi Minh City has reported 350 dengue fever cases in the past week, with a total of 20,116 cases from the beginning of the year to August 19 (Son, 2023). Dengue fever cases have increased 19.1% compared to the average four weeks ago, with 224 cases being treated. [Full article]



Malaria Cases in the ASEAN Region

From January 1 to August 19, 2023 (Epi-Week 33)



Malaria cases in the ASEAN region

Country	Epi-Week Reported	Cumulative Malaria Cases	New Cases Since the Previous Report	Deaths	Case Fatality Rate (CFR)
Brunei Darussalam	-	-	-	-	-
Cambodia	-	-	-	-	-
Indonesia ¹	Week 30	1,056	0	0	0.00%
Lao PDR	-	-	-	-	-
Malaysia ¹	Week 22	866	0	0	0.00%
Myanmar ¹	Week 23	4,510	0	0	0.00%
Philippines ¹	Week 28	31	0	0	0.00%
Singapore ¹	Week 30	10	0	0	0.00%
Thailand ¹	Week 27	9,300	0	3	0.03%
Vietnam ¹	Week 30	146	145	0	0.00%
Total		15,919	145	3	0.02%

1. BlueDot Developer Portal, accessed August 21, 2023, <u>https://developer-portal.bluedot.global/</u>.

• The ASEAN region reported **145** new malaria cases in Vietnam since the previous report. The region reported **15,919** total cases and **3** total deaths in 2023 with **0.02%** CFR.

Malaria

• Vietnam: From 2023 to 2024, Lai Chau and Khanh Hoa provinces experienced a 16.4% and 100% increase in malaria cases, respectively (SGGP News, 2023). The Ministry of Health has requested the health sector to identify the causes of the increase, assess the risk, and improve surveillance, early detection, and treatment. The goal is to limit the risk of severe malaria and death, and to eliminate the source of the disease. [Full article]

Vaccine-Preventable Diseases





Diphtheria Cases in the ASEAN Region

From January 1 to August 19, 2023 (Epi-Week 33)



Diphtheria cases in the ASEAN region

Country	Epi-Week Reported	Cumulative Diphtheria Cases	New Cases Since the Previous Report	Deaths	Case Fatality Rate (CFR)
Brunei Darussalam	-	-	-	-	-
Cambodia	-	-	-	-	-
Indonesia ³	Week 32	416	22	29	6.97%
Lao PDR	-	-	-	-	-
Malaysia	-	-	-	-	-
Myanmar	-	-	-	-	-
Philippines ²	Week 28	92	4	18	19.57%
Singapore	-	-	-	-	-
Thailand	-	-	-	-	-
Vietnam ¹	Week 21	3	0	1	33.33%
Total		511	26	48	9.39%

BlueDot Developer Portal, accessed August 21, 2023, <u>https://developer-portal.bluedot.global/</u>. Department of Health Website, accessed August 21, 2023 "Statistics," July 15, 2023, <u>https://doh.gov.ph/statistics</u>. 1.

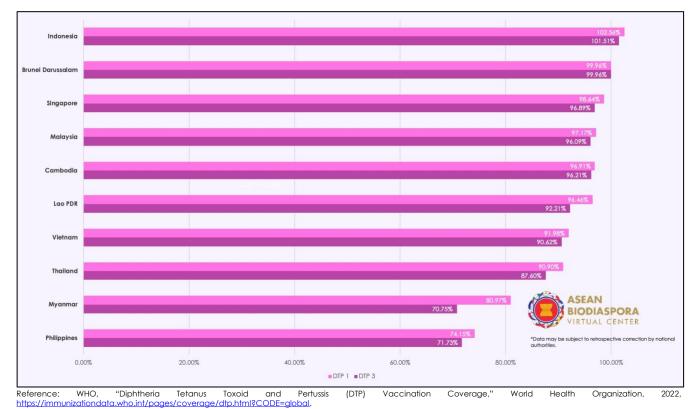
2. 3. Ministry of Health Indonesia

The ASEAN region reported 26 new diphtheria cases in Indonesia and the Philippines since the previous report. The region reported 511 total cases and 48 total deaths in 2023 with 9.39% CFR.



Diphtheria, Tetanus Toxoid, and Pertussis Vaccination Coverage in the ASEAN Region

As of 2022





Measles Cases in the ASEAN Region

From January 1 to August 19, 2023 (Epi-Week 33)



Measles cases in the ASEAN region

Country	Epi-Week Reported	Cumulative Measles Cases	New Cases Since the Previous Report	Deaths	Case Fatality Rate (CFR)
Brunei Darussalam	-	-	-	-	-
Cambodia	-	-	-	-	-
Indonesia ³	Week 32	3,527	1,366	17	0.48%
Lao PDR	-	-	-	-	-
Malaysia	-	-	-	-	-
Myanmar	-	-	-	-	-
Philippines ²	Week 28	877	40	3	0.34%
Singapore ¹	Week 24	6	0	0	0.00%
Thailand ¹	Week 16	73	0	0	0.00%
Vietnam	-	-	-	-	-
Total		4,483	1,406	20	0.45%

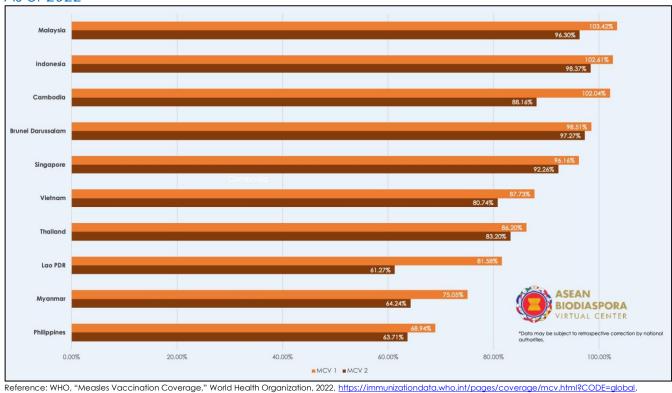
BlueDot Developer Portal, accessed August 21, 2023, <u>https://developer-portal.bluedot.global/</u>.
Department of Health Website, accessed August 21, 2023 "Statistics," July 15, 2023, <u>https://doi.gov.ph/statistics</u>.

Ministry of Health Indonesia

• The ASEAN region reported **4,483** new measles cases in Indonesia and the Philippines since the previous report. The region reported **4,483** total cases and **20** total deaths in 2023 with **0.45%** CFR.



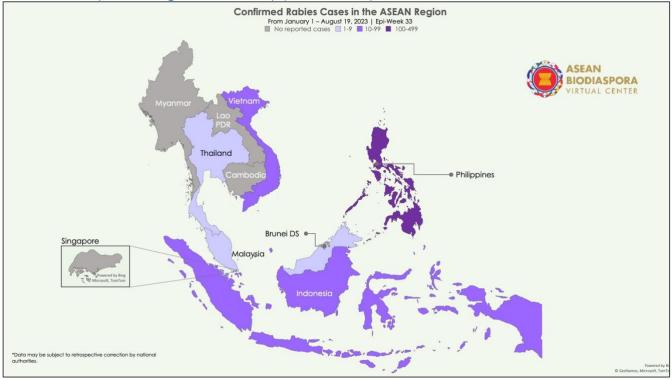
Measles Vaccination Coverage in the ASEAN Region As of 2022





Rabies Cases in the ASEAN Region

From January 1 to August 19, 2023 (Epi-Week 33)



Rabies cases in the ASEAN region

Country	Epi-Week Reported	Reported Rabies Cases	Confirmed Rabies Cases	Rabies- Related Deaths
Brunei Darussalam	-	-	-	-
Cambodia	-	-	-	-
Indonesia ¹	Week 32	305	17	47
Lao PDR	-	-	-	-
Malaysia ¹	Week 32	19	9	17
Myanmar	-	-	-	-
Philippines ²	Week 28	207	207	207
Singapore	-	-	_	-
Thailand ¹	Week 21	3	3	3
Vietnam ¹	Week 31	11	10	8
Total		545	247	282

BlueDot Developer Portal, accessed August 21, 2023, <u>https://developer-portal.bluedot.global/</u>.
Department of Health Website, accessed August 21, 2023 "Statistics," July 15, 2023, <u>https://doi.gov.ph/statistics</u>.

• The ASEAN region reported **545** rabies cases, **247** confirmed rabies cases, and **282** rabies-related deaths.



Rabies

• Malaysia: Sarawak is facing a surge in rabies cases, with Kampung Narum in Marudi being the latest infected area (Bernama, 2023a). The state health department recorded 13 deaths from 15 rabies cases this year, with the cumulative total human rabies cases now standing at 70 with 63 deaths. The Sarawak Department of Veterinary Services (DVS) has intensified anti-rabies vaccination programs, with a mass vaccination scheduled for August 19 and 20. The DVS and IBET have set a target to vaccinate 40,000 dogs across the state this year, with 27,668 dogs vaccinated so far. Owners must ensure their pets are vaccinated. [Full article]



References

- Bernama. (2023a) Rabies cases on the rise in Sarawak, says minister, The Star. Available at: https://www.thestar.com.my/news/nation/2023/08/15/rabies-cases-on-the-rise-in-sarawaksays-minister (Accessed: 21 August 2023).
- Bernama (2023b) Whooping cough case reported in Rompin, situation under control. Available at: https://www.nst.com.my/news/nation/2023/08/944796/whooping-cough-casereported-rompin-situation-under-control (Accessed: 19 August 2023).
- Borneo Bulletin. (2023, August 11). Dengue outbreak in Bangladesh sparks alarm after 364 people die this year and infections rise ". Borneo Bulletin. https://borneobulletin.com.bn/dengueoutbreak-in-bangladesh-sparks-alarm-after-364-people-die-this-year-and-infections-rise
- Dolare, R. (2023) Top strategies to prevent dengue in the workplace and for travellers, Punekar News. Available at: https://www.punekarnews.in/top-strategies-to-prevent-dengue-in-the-workplace-and-for-travellers/ (Accessed: 19 August 2023).
- Jae-eun, K. (2023) S. Korea likely to downgrade covid-19 on par with Seasonal Flu This Month, Yonhap News Agency. Available at: https://en.yna.co.kr/view/AEN20230820001500315?section=national%2Fnational (Accessed: 21 August 2023).
- Jordan, T. (2023) Rabid bat identified in Howell, first rabies case of the Year for Livingston County, https://www.wilx.com. Available at: https://www.wilx.com/2023/08/18/rabid-bat-foundlivingston-county/ (Accessed: 19 August 2023).
- Kohli, S. (2023) Amritsar: Family alleges negligence as girl dies after getting injection, PTC News. Available at: https://www.ptcnews.tv/punjab-2/amritsar-family-alleges-negligence-as-girldies-after-getting-injection-729708 (Accessed: 19 August 2023).
- Lee, Y. (2023) Korimedi, Early symptoms similar to 'malaria and 'malaria.' Available at: https://kormedi.com/1615123/%EC%B4%88%EA%B8%B0%EC%A6%9D%EC%83%81-%EB%B9%84%EC%8A%B7%ED%95%9C-%EB%A7%90%EB%9D%BC%EB%A6%AC%EC%95%84%EC%99%80-%EB%A7%90%EB%9F%AC%EB%A6%AC%EC%95%84/ (Accessed: 21 August 2023).
- Maryland DOH. (2023) Maryland Department of Health Newsroom. Maryland.gov Enterprise Agency Template. Available at: https://health.maryland.gov/newsroom/Pages/Maryland-Department-of-Health-announces-positive-case-of-locally-acquired-malaria.aspx (Accessed: 19 August 2023).
- McKenzie, N. (2023) Three positive cases of Dengue Fever recorded on New Providence, Eye Witness News. Available at: https://ewnews.com/three-positive-cases-of-dengue-fever-recorded-on-new-providence (Accessed: 19 August 2023).
- Rizwan, H. (2023) Dengue cases on the rise; experts explain the symptoms and causes, BOOM. Available at: https://www.boomlive.in/explainers/dengue-cases-on-the-rise-expertsexplain-prevention-symptoms-causes-treatment-22788 (Accessed: 19 August 2023).
- SGGP News. (2023) Find the cause of the sharp increase in malaria cases in Lai Chau, Khanh Hoa, SGGP News. sggp.org.vn. Available at: https://www.sggp.org.vn/tim-nguyen-nhan-camac-sot-ret-tang-manh-o-lai-chau-khanh-hoa-post701466.html (Accessed: 21 August 2023).
- Son, T. (2023) HCMC records surge of Dengue and HFMD cases, SGGP English Edition. Available at: https://en.sggp.org.vn/hcmc-records-surge-of-dengue-and-hfmd-casespost104402.html (Accessed: 21 August 2023).



- Team, C.M. (2023) Miami-Dade, broward issue alerts after confirmed cases of Dengue virus, CBS News. Available at: https://www.cbsnews.com/miami/news/miami-dade-broward-issuealerts-after-confirmed-cases-of-dengue-virus/ (Accessed: 19 August 2023).
- The Gleaner. (2023) Guyana Records significant number of dengue fever cases. Caribbean | Jamaica Gleaner. Available at: https://jamaicagleaner.com/article/caribbean/20230818/guyana-records-significant-number-denguefever-cases (Accessed: 19 August 2023).
- Villanueva, R. (2023) Dengue cases up in Typhoon-hit areas, Philstar.com. Available at: https://www.philstar.com/nation/2023/08/19/2289681/dengue-cases-typhoon-hit-areas (Accessed: 19 August 2023).
- Wahid, A.S. (2023) Kes Denggi di Kelantan Meningkat 225 peratus, Dua Kematian, Sinar Harian. Available at: https://www.sinarharian.com.my/article/274228/edisi/kelantan/kes-denggi-dikelantan-meningkat-225-peratus-dua-kematian (Accessed: 21 August 2023).
- Xinhua. (2023) Dengue fever cases hit 20,936 in Laos with 14 deaths, China.org.cn. Available at: http://www.china.org.cn/world/Off_the_Wire/2023-08/17/content_103999472.htm (Accessed: 21 August 2023).

