

Global updates on COVID-19 and other diseases

2025-R4

April 2025

Prepared by the Science Team, SIDC

Edited by Prof Andrew Kiyu (Faculty of Medicine and Health Sciences, UNIMAS)

Contents

Summary	3
1.0 COVID-19 and related issues	4
1.1 Malaysia	4
1.2 Severe co-infection, Hong Kong	4
1.3 Updates from the World Health Organization	4
2.0 Tuberculosis	5
2.1 Zoonotic/Bovine tuberculosis	5
2.1.1 First human case, South Korea	5
2.1.2 Human cases linked to unpasteurised dairy, Morocco	5
3.0 Soil-transmitted helminths	6
3.1 Schistosoma: hybrid human/bovine, Malawi	6
4.0 Vector-borne diseases	6
4.1 Malaria	6
4.1.1 World Malaria Day	6
4.1.2 Research updates: <i>Plasmodium cynomolgi</i> as a potential emergence of new zoonotic malaria in Southeast Asia	6
4.2 Dengue, an overview	7
4.3 Filariasis, understanding the disease	8
4.4 Chikungunya	8
4.4.1 Outbreak spread, Reunion Island	8
5.0 African swine flu	9
5.1 Updates from the Food and Agriculture Organization	9
5.2 Research findings	11
5.2.1 Live vaccine side effects and reverting to virulence	11
5.2.2 Suspected vaccine-derived ASFV strain causes reproductive outbreak in VietNam .	12
6.0 Avian/zoonotic (other non-avian) influenza	12
6.1 Avian influenza A H5N1	12
6.1.1 Human cases	12
6.1.1.1 First confirmed fatal human case, Mexico	12

Global updates on COVID-19 and other diseases

2025-R4

April 2025

6.1.1.2 Encephalitis, Viet Nam	13
6.1.2 Animals.....	13
6.1.2.1 South Korea, ongoing: native chicken.....	13
6.1.2.2 Cambodia, backyard poultry	13
6.1.2.3 India, extensive activity	14
6.1.2.4 Other Asian countries.....	14
6.1.2.5 Oceania (Australia and New Zealand)	14
6.1.2.6 Europe.....	14
6.1.2.7 The US	15
6.1.2.8 Canada.....	15
6.2 Avian influenza A H7N3	16
6.2.1 Commercial poultry, Mexico	16
6.3 Joint Food and Agriculture Organization/World Health Organization/World Organisation for Animal Health public health assessment.....	16
6.4 Reaction from global experts	17
7.0 Other diseases/current outbreaks:.....	18
7.1 Influenza-like virus outbreak, Malaysia	18
7.2 Mpox	18
7.2.1 Clade II death: immunocompromised, the Philippines	18
7.2.2 Updates from the World Health Organization.....	19
7.3 Ebola (Sudan) virus, update from the World Health Organization	21
7.4 Measles.....	22
7.4.1 The US	22
7.4.1.1 Forecast: Tipping point.....	22
7.4.1.2 Centers for Disease Control and Prevention, update	22
7.4.2 Canada	23
7.4.3 Region of the Americas, update from the World Health Organization	24
7.4.4 Europe: Update from European Centre for Disease Prevention and Control	25
7.4.4.1 2024 report: 10-fold increase.....	25
7.4.4.2 Current situation.....	25
7.4.5 Taiwan	25
7.5 Invasive meningococcal disease, Kingdom of Saudi Arabia	26
7.6 World Immunization Week and vaccine-preventable diseases, update from the World Health Organization.....	26

Global updates on COVID-19 and other diseases

2025-R4

April 2025

7.7 Antibiotic resistance, World Health Organization updates	27
7.8 World Health Day, 7 April 2025	28
7.9 Global pandemic treaty agreed, the World Health Organization	28
7.10 Global Outbreak Alert and Response Network turns 25	29
8.0 Implications for Sarawak based on the views of SIDC	30
Reference	32

Summary

- WHO Member States agreed to a pandemic agreement.
- Malaysia will officially bring its COVID-19 response to a close.
- Zoonotic TB cases linked to dairy animals were reported in South Korea and Morocco.
- Hybrids of soil-transmitted helminths can pose a threat to controlling the disease.
- World Malaria Day highlights the need for commitment to end the disease, especially in Africa.
- Dengue remains a scourge in the tropics.
- African Swine Fever (ASF) continues to cause significant economic loss globally.
- Experts have warned of the potential of H5N1 to cause a major outbreak of animal and human health concern.
- The Sudan virus outbreak has ended.
- The explosion of measles cases continues in the US.
- Increases in vaccine-preventable disease outbreaks undermine years of progress.
- World Health Day 2025 emphasises the improvement of women's health and well-being.

1.0 COVID-19 and related issues

1.1 Malaysia

Malaysia will officially revoke the extension order that continues to designate certain areas as COVID-19-infected local zones on 1 May 2025. Kementerian Kesihatan Malaysia (KKM) has formalised this revocation through P.U. (A) 138/2025, which was gazetted on 29 April 2025, effectively nullifying the Prevention and Control of Infectious Diseases (Declaration of Infected Local Areas) (Extension of Operation) (No. 2) Order 2024.¹

1.2 Severe co-infection, Hong Kong

Investigations are ongoing by the Hong Kong Centre for Health Protection (CHP) for a severe case of an 8-month-old child co-infected with COVID-19 and human metapneumovirus (hMPV). As of 23 April 2025, the child remains in critical condition. The CHP has reminded the public to practise good hygiene. High-risk individuals were also recommended to get vaccinated or receive booster doses against COVID-19 to minimise the risk of serious complications. The CHP has noted an increase in local COVID-19 activity and emphasises the importance of preventative measures, including wearing masks, practising proper hand hygiene, and maintaining good ventilation.²

1.3 Updates from the World Health Organization

The SARS-CoV-2 virus continues to circulate. Test positivity on 27 April 2025 was an estimated 2.8%.³ Up to 13 April 2025, a cumulative total of 777.72 million cases have been reported worldwide since the COVID-19 health emergency was declared.⁴ Based on the 28-day data from 85 countries/areas/territories (CAT) that were reporting, from 17 March – 13 April 2025, an estimated 33,400 cases were reported globally, the majority from Europe and the Americas. This is an almost 53% decline from the estimated cases reported in the previous 28-day reporting period (n ~71,800). The trend for COVID-19 deaths and hospitalisations continues to decline by approximately 42% and 24%, respectively. Of the 5,193 admissions, 195 were admitted into the intensive care unit (ICU).

Omicron JN.1 remains the prevalent variant of interest (VOI). Current variants under monitoring (VUM) in circulation include LP.8.1, XEC, and KP.3.1.1.⁵

It is noted that the number of countries testing, sequencing and reporting has declined and is not consistent. Alongside reporting delays, the trends must be interpreted with caution.

2.0 Tuberculosis

2.1 Zoonotic/Bovine tuberculosis

2.1.1 First human case, South Korea

The Korea Disease Control and Prevention Agency (KDCA) reported the first confirmed case of bovine tuberculosis (bTB), caused by *Mycobacterium bovis*, in a human in Korea. The patient, a 56-year-old female, was initially diagnosed with tuberculosis (TB) in March 2023. However, her work in a veterinary hospital processing specimens for zoonotic TB classified her as a high-risk individual for potential exposure. The confirmation of bTB came because of a positive culture test. Epidemiological investigations revealed that despite consistently wearing disposable gloves and gowns at work, she had previously had a needlestick incident while working. As the incubation time of the pathogen varies depending on an individual's immune status, the exact time of infection cannot be determined.^{6,7}

Between 2 July 2021 and 20 September 2022, an outbreak of bovine TB occurred among exhibition animals at a zoo in South Korea. Contact investigation of zoo workers, which included interferon-gamma release assay (IGRA) tests for latent TB infection (LTBI), revealed a 24.1% prevalence, indicating exposure to the bacteria. None of them had active TB.⁸

2.1.2 Human cases linked to unpasteurised dairy, Morocco

Local authorities in Tinghir Province have noted the increase in zoonotic bTB cases in the Iknouen (rural) commune that are potentially linked to the consumption of unregulated and unsterilised milk and dairy products. Cases of lymphatic TB are also on the rise. Both local and health authorities have called for increased coordination between the health and agriculture ministries to prevent further spread of the disease.^{9–11}

Note:

Mycobacterium bovis is one of the members of the *Mycobacterium tuberculosis* complex (MTBC), which also includes *M. tuberculosis*, the causal organism of TB in humans. It is a zoonotic pathogen that infects wild and domesticated animals such as wild boars, deer, cattle, goats, pigs, cats and dogs. Mammalian tuberculosis is a major zoonotic disease, with cattle being the main source of infection for humans. The disease remains a serious animal and human health issue in many low-income countries and can lead to substantial economic losses.^{12,13}

3.0 Soil-transmitted helminths

3.1 Schistosoma: hybrid human/bovine, Malawi

A recent study in Malawi revealed unexpected patterns of schistosome egg excretion in humans, indicating the hybridisations of *Schistosoma mattheei* with *S. haematobium* and *S. mansoni*. Molecular analyses confirmed these hybrids, with a notably higher abundance of zoonotic and hybrid eggs found in faecal samples compared to urine. This suggests that intestinal infections caused by such hybrids may be more widespread than previously documented by standard diagnostic practices, which often focus on urogenital samples and may miss intestinal cases.¹⁴ These findings highlight the complexity of schistosomiasis transmission in areas where zoonotic and hybrid parasites circulate, emphasising the need for enhanced surveillance and diagnostic approaches, particularly where zoonotic transmission is possible.

4.0 Vector-borne diseases

4.1 Malaria

4.1.1 World Malaria Day

World Malaria Day falls annually on 25 April. The World Health Organization (WHO) called for renewed global and local efforts to eradicate malaria, emphasising the need to protect fragile gains made since 2000, including preventing >2 billion cases and saving nearly 13 million lives. Despite progress, malaria remains a significant public health threat, particularly in Africa, where 95% of the burden is concentrated. Challenges such as health system weaknesses, drug and insecticide resistance, and climate change hinder further advancement. The WHO urges increased investment in innovative tools like next-generation insecticide-treated nets and malaria vaccines, while also advocating for stronger political will, domestic funding, and multisectoral collaboration to drive progress. The 2025 theme, “*Malaria ends with us: reinvest, reimagine, reignite*”, highlights the urgent need for collective commitment to finally end this deadly disease.

^{15,16}

4.1.2 Research updates: *Plasmodium cynomolgi* as a potential emergence of new zoonotic malaria in Southeast Asia

Plasmodium cynomolgi is an emerging public health concern, primarily infecting macaques, though increasingly reported in humans across Southeast Asia. Its close

morphological resemblance to *P. vivax* often leads to underdiagnosis, complicating surveillance efforts. Research indicates that *P. cynomolgi* can invade human red blood cells via mechanisms similar to *P. vivax*, suggesting a real potential for zoonotic transmission.^{17,18}

Human-driven environmental changes, such as deforestation and urbanisation, are bringing macaques into closer contact with human populations, increasing the risk of transmission via competent *Anopheles* mosquito vectors, particularly those in the Leucosphyrus Group. The parasite's ability to form hypnozoites (dormant liver stages that cause relapses) further complicates clinical management, necessitating specific therapeutic approaches. The distribution of *P. cynomolgi* overlaps with the habitats of both its macaque hosts and mosquito vectors, especially in Malaysia, where most studies have been conducted. The coexistence of competent vectors and ecological changes driven by human activity facilitates the spillover of this parasite to humans. There is an urgent need to strengthen public health responses, including improved molecular diagnostics, enhanced surveillance, and targeted vector control strategies to prevent *P. cynomolgi* from becoming a widespread zoonotic threat akin to *P. knowlesi*.¹⁸

4.2 Dengue, an overview

Dengue virus (DENV) infection remains a significant and escalating public health concern, endemic in over 100 countries, including parts of the US.¹⁹ From January to March 2025, more than 1.6 million dengue cases were reported globally, resulting in 852 deaths.²⁰

As of April 25, 2025, the Americas have recorded nearly 2 million suspected dengue cases. This number represents a 70% decrease compared to the same period last year. Brazil continues to be the leading contributor both regionally and worldwide, with >1 million cases and >600 deaths reported this year. Dengue serotype 3 (DENV3) is currently the predominant strain circulating in Brazil.²¹

In Malaysia, >20,000 dengue cases have been reported across various states as of April 2025, with Selangor remaining the major contributor.²² Countries neighbouring Malaysia, such as the Philippines, reported 43,732 dengue cases in March 2025, nearly doubling that reported from the same month in 2024. This surge prompted the Quezon City Government to declare a dengue outbreak.^{23,24} Over 1,600 cases have been reported in Singapore by April 2025, with dengue serotype 2 being the most common, accounting for more than half of the cases.^{25,26} Indonesia has observed approximately 38,000 cases and 182 deaths so far this year. In March 2025, flood-affected areas such as Jakarta and West Kalimantan experienced localised spikes, prompting health authorities to prioritise the elimination of stagnant water sources and distribute insecticide-treated nets.²⁷ and has launched initiatives to reduce dengue incidence, including a pilot vaccination program

in Nakhon Phanom and has mobilised health volunteers to inspect and eliminate mosquito breeding sites to prevent further spread of the virus.²⁸

4.3 Filariasis, understanding the disease

Lymphatic filariasis (LF), commonly known as elephantiasis, is a neglected tropical disease (NTD) that is endemic in 72 countries, affecting >120 million people. It is a parasitic infection associated with one of the three nematodes, *Wuchereria bancrofti*, *Brugia malayi*, or *B. timori*, which are transmitted through mosquito bites. Approximately 90% of LF cases globally are caused by *W. bancrofti*. The parasites live in the lymphatic system, causing fever, swollen limbs, chronic disfigurement, severe disability and stigma. While many infected individuals are asymptomatic, the infection silently damages the lymphatic system over time.^{29,30}

The **Global Programme to Eliminate Lymphatic Filariasis (GPELF)**, launched by the WHO in 2000, recommended mass drug administration (MDA) to interrupt transmission. By 2018, these infections were reduced by 74%. Under the WHO's **Neglected Tropical Diseases Road Map (2021–2030)**, the GPELF aims to ensure that 80% of endemic countries meet elimination criteria, 100% implement post-MDA or post-validation surveillance, and ultimately reduce to zero the population requiring MDA. As of recent data, 18 out of 73 endemic countries have completed interventions and are undergoing surveillance to validate elimination, while 22 others have achieved full MDA coverage and are on track for elimination. However, 33 countries have yet to reach full geographical coverage, and 10 have not started treatment or justified exemption.^{30–32}

Malaysia remains committed to the WHO's elimination goals through ongoing surveillance, treatment, and public health outreach.³³ In a goal to eliminate the disease as a public health problem by 2025, Malaysia's National Lymphatic Filariasis Elimination Programme (PEFLK), held since 2002, has targeted 127 endemic areas across 8 states. The aim is to reduce the infection prevalence to $\leq 2\%$, or fewer than two people per 100 population, screened in endemic areas.^{34,35} In 2022, a total of 267 cases were reported nationwide, declining to 231 the year after. However, in 2024, the tally jumped to 900. As of 1 May 2025, 113 cases have been reported nationally since 1 January, with Sarawak recording 70 cases (62% of the total).³⁶

4.4 Chikungunya

4.4.1 Outbreak spread, Reunion Island

Reunion Island is currently experiencing a significant chikungunya public health crisis that began in August 2024, which has escalated sharply in recent months. Over 35,000

cases have been reported as of late April 2025, with a suggestion that up to 100,000 people could be infected. The outbreak has resulted in at least 7 deaths, including an infant (below one month old).^{37,38} The current epidemic is fuelled by favourable conditions (hot, humid weather, heavy rainfall, and cyclone-related water stagnation) which increase mosquito breeding sites, and a largely non-immune population. Vaccination campaigns targeting vulnerable groups are underway in tandem with mosquito control and public health measures. Travel warnings have been issued by several countries for individuals to get vaccinated before going to the island.^{37,39,40}

The last major outbreak occurred almost 20 years ago, in 2005-2006, which caused almost 250 deaths.³⁹ The main vector, *Aedes aegypti* was not established before this outbreak. The endemic *A. albopictus* mosquitoes were then not known to transmit the virus; the virus had mutated to better adapt to it, which enhanced its ability to spread chikungunya.⁴¹

5.0 African Swine Fever

African Swine Fever (ASF) is an acute haemorrhagic disease caused by the infection of domestic swine and wild boar by the African swine fever virus (ASFV), a large, double-stranded DNA virus that is non-zoonotic. The mortality rate of the disease is 90-100%, making it a major disease of agricultural and economic concern.^{43,44}

5.1 Updates from the Food and Agriculture Organization

Globally, ASF has been reported in 64 countries across 5 world regions, including Asia (**Figure 1**), since 2022. It has affected >953,000 domestic pigs and >33,700 wild boars, with the loss of >3 million domestic pigs (**Table 1**).

Malaysia continues to respond to ASF outbreaks reported in early 2025. Fifty-nine farms were affected, with approximately 14,000 pigs from 57 farms culled. The disposal was completed by 31 March 2025. Sarawak imposed bans on the import of live pigs and pork products from Sabah (effective 15 January 2025) and from Peninsular Malaysia (effective 28 February 2025). Surveillance efforts have been intensified nationwide since Malaysia's first ASF outbreak in Sabah in 2021.^{44,45}

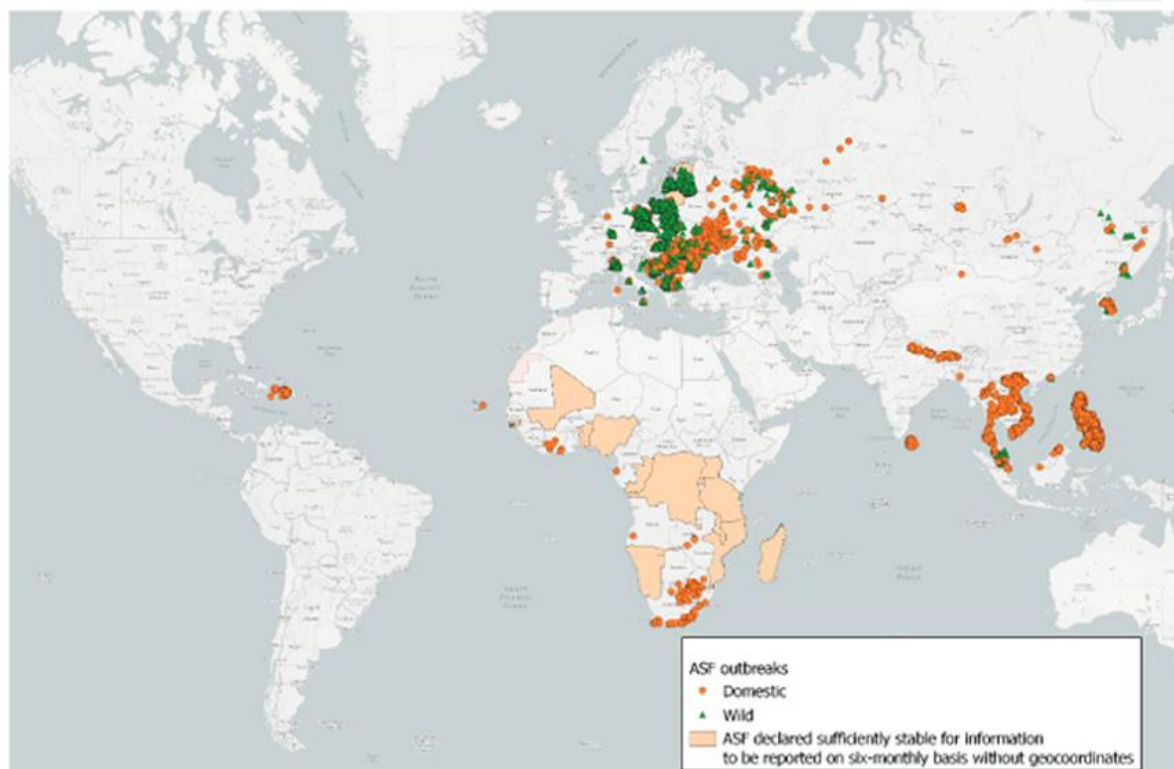


Figure 1. Map of ASF outbreaks which started during 01 Jan 2022 – 28 Feb 2025 in domestic pigs and wildlife. The map was obtained from [asf-report-63-1-1.pdf](#).

Table 1. Summary of the number of outbreaks, cases and animal losses caused by ASF in the different world regions since January 2022. Information from [asf-report-63-1-1.pdf](#)

Region	Outbreaks		Cases		Losses*
	Domestic pigs	Wild boar	Domestic pigs	Wild boar	Domestic pigs
Africa	786	5	101,998		91,795
Americas	65	0	467		9,412
Asia	6,027	107	305,274	540	530,967
Europe	4,555	20,793	545,526	33,231	1,434,855
Oceania	0	0	0	0	0
Total	11,433	20,905	953,265	33,771	2,067,029

*Losses (deaths + animals killed and disposed of); refers to losses in the establishments affected by the outbreaks and does not include the animals culled in areas around the outbreak for controlling the disease.

Since early 2025, **VietNam** has recorded 84 ASF outbreaks across 22 provinces and cities, which led to the loss of nearly 4,500 pigs due to death or culling. Most new outbreaks are concentrated in small-scale farms. In response, Vietnam has intensified its ASF vaccine development and deployment efforts.⁴⁴ On 3 April 2025, the Ministry of Agriculture and Environment (formerly the Ministry of Agriculture and Rural Development) organised a national workshop on disease prevention and pig farming development with the participation of local government authorities, animal production and animal health associations and companies. Participants were alerted to the current situation and the forecast of outbreaks in the coming months.⁴⁶

South Korea's most recent case was confirmed on 16 March 2025 at a large farm in Yangju City, Gyeonggi-do, which housed 6,000 pigs. The ASFV continues to circulate in wild boar populations, with 4,244 confirmed cases across multiple provinces, and 13 of the 20 most recent wild boar detections (14 February–10 April 2025) located in Andong and Uiseong, areas recently impacted by large-scale wildfires that damaged over 50,000 hectares of forest.^{44,47}

Since the first ASF outbreak in May 2021, **Bhutan** has reported outbreaks in 10 districts, including cases in wild boars. Three outbreaks have been reported in 2025; the latest in April involved two districts and 224 pigs.⁴⁸

Mizoram state in **India** is facing its worst ASF outbreak, which began in March 2025. Over 3,000 pigs have been affected, including 1,000 culled to contain the spread of the disease.⁴⁹

The FAO has warned that the ASFV can persist for extended periods in raw, frozen, dried, or undercooked pork and pork products, posing a high risk of transboundary spread. With increased regional travel during April holidays, including Qingming Festival (4 April), Songkran (13 April), and Easter (20 April), the FAO has urged intensified customs inspections at airports, seaports, and international post offices. Recent test results in China have suggested that ASFV, including a new reassortant strain, may be carried in passenger luggage. Clear warning signs should be displayed at border entry points, instructing travellers to surrender pork products or dispose of them safely to avoid penalties.⁴⁴

5.2 Research findings

5.2.1 Live vaccine side effects and reverting to virulence

ASFV-G-ΔI177L, a modified live-attenuated vaccine created by deleting the I177L gene and replacing it with another (mCherry reporter gene), was initially considered safe and effective. However, a recent study found that when administered to pregnant sows, the

vaccine strain caused moderate ASF-related clinical signs and severe reproductive issues, including a high rate of stillbirths and low survival of piglets. Furthermore, during *in vivo* passaging, the vaccine strain reverted to virulence within four passages. Mutations in the C257L gene were identified, potentially contributing to increased replication fitness and virulence. These findings highlighted the genetic instability of ASFV-G-ΔI177L and its significant risks, particularly to pregnant sows and their offspring, underscoring the need for rigorous safety testing of ASF vaccine candidates.⁵⁰ VietNam has suspended the use of the vaccine in August 2022.⁵¹

5.2.2 Suspected vaccine-derived ASFV strain causes reproductive outbreak in VietNam

An outbreak on a Vietnamese pig farm has been linked to a weakened version of the ASFV, which closely resembles strains used in experimental vaccines, despite the pigs not being officially vaccinated. While younger pigs showed few symptoms, pregnant sows experienced severe reproductive issues, including reproductive failure and udder damage. This raised concerns that unapproved or illegal vaccines may be circulating undetected, potentially putting pig farms at significant risk. Stronger regulations, enhanced monitoring, and improved biosecurity measures are urgently needed to mitigate such risks and protect the global pig industry.⁵²

6.0 Avian/zoonotic (other non-avian) influenza

6.1 Avian influenza A H5N1

6.1.1 Human cases

6.1.1.1 First confirmed fatal human case, Mexico

On 2 April 2025, the International Health Regulations (IHR) National Focal Point (NFP) for Mexico notified the World Health Organization (WHO) of the country's first laboratory-confirmed human infection with an avian influenza A(H5N1) clade 2.3.4.4b genotype D1.1 virus in the state of Durango. The case, a <10 years old child presented with symptoms on 7 March 2025, only to worsen and die from respiratory complications a day after. Local and national health authorities have implemented a range of measures to monitor, prevent, and control the situation; contact tracing identified 91 individuals, including 21 household contacts, 60 healthcare workers, and 10 individuals from a childcare centre.⁵³

While there have been multiple reports of A(H5N1) outbreaks in birds across Mexico, including in Durango, the exact source of infection in this case remains under

investigation. To date, no further cases of human H5N1 infection linked to this case have been identified. This case represents the second documented case of human infection with avian influenza A(H5) in Mexico and the first confirmed case of infection with an A(H5N1) influenza virus.

The WHO assesses that the overall risk of influenza A(H5) remains low to public health. However, this risk is considered low or moderate for those with occupational exposure.

6.1.1.2 Encephalitis, Viet Nam

An 8-year-old girl in Tay Ninh, southeastern Viet Nam, was diagnosed with encephalitis caused by the A/H5N1 virus. The child had contact with dead chickens two weeks before symptom onset and hospitalisation. The case is rare because the virus affected the central nervous system rather than the respiratory tract. Symptoms (fever, headache and vomiting) began on 11 April 2025, and confirmation was made on 18 April by the labs at the Pasteur Institute, Ho Chi Minh City, based on an initial positive polymerase chain reaction (PCR) test on her cerebrospinal fluid (CSF) and a negative test for nasal swab by the labs at the Tropical Diseases Hospital.⁵⁴

Experts from the Oxford University Clinical Research Unit (OUCRU), in collaboration with the Hospital for Tropical Diseases and Children's Hospital 1 (where the 8-year-old was initially admitted), had earlier in 2004 discovered the A/H5N1 influenza virus in the CSF of two children who had symptoms of severe diarrhoea, convulsions, coma, and then died, without any signs of respiratory disease.

6.1.2 Animals

6.1.2.1 South Korea, ongoing: native chicken

The highly pathogenic avian influenza (HPAI H5N1) has been confirmed at a native chicken farm in Asan, South Chungcheong Province, affecting approximately 28,000 chickens. As this is the 47th case of the disease reported around the Cheonan and Asan areas since October 2024, the virus has likely been circulating in these areas. Authorities have responded by implementing quarantine measures, including access control (quarantine management), disinfection, and epidemiological investigations to prevent further sporadic spread. The government has been conducting inspections of poultry farms in the area and implementing a nationwide disinfection week (21-27 April 2025).

^{55,56}

6.1.2.2 Cambodia, backyard poultry

On 3 April 2025, a confirmed outbreak of HPAI H5N1 was reported in Kracheh (Krachaeh) Province in a backyard poultry holding. All 20 birds on the premises died, and the rest

were culled as part of containment measures. The outbreak was reported to the World Organisation for Animal Health (WOAH) and involved domestic chickens. Following detection, disinfection and movement control were implemented. This event represents Cambodia's first confirmed HPAI outbreak in poultry for 2025.⁵⁷

6.1.2.3 India, extensive activity

India continues to face extensive HPAI H5N1 activity. As of early April 2025, 8 states were actively affected by outbreaks, with at least 34 epicentres reported by the Department of Animal Husbandry and Dairying (DAHD). The virus has been confirmed in domestic poultry, including layers and broilers, in both commercial and backyard settings. Alarming, H5N1 has also spilled over into several wild and domestic mammals, including tigers, leopards, dogs, and cats, with genomic sequencing confirming the virus in these species.⁵⁸

6.1.2.4 Other Asian countries

No new HPAI outbreaks were officially reported in Japan, South Korea, or China during April 2025, though these countries continue active wild bird surveillance. The Philippines has not reported new HPAI detections since January 2025; routine surveillance and control measures remain in place.⁵⁹

6.1.2.5 Oceania (Australia and New Zealand)

No confirmed cases of HPAI H5N1 were reported in Australia or New Zealand during April 2025. Australia remains HPAI-free, and the Department of Agriculture continues active wild bird monitoring, especially in northern and coastal regions.⁶⁰ New Zealand has only reported low-pathogenic avian influenza (LPAI) strains, with no indication of high-risk spread.⁶¹

6.1.2.6 Europe

HPAI H5N1 continues to circulate broadly. The United Kingdom (UK) has had numerous H5N1 poultry outbreaks; notably, England's North Yorkshire zone completed control in late April 2025. The UK also reported its first H5N1 infection in a mammal – a single sheep from an infected poultry premises – confirmed in late March 2025.⁶²

Other European countries (France, Germany, Italy, Poland, etc.) reported ongoing H5N1 in wild birds and occasional poultry. By the end of April, some UK control zones: Hampshire (near Pickering) and County Durham were revoked after surveillance, reflecting containment of specific outbreaks. However, multiple sites in England,

Scotland, and Wales remain under surveillance due to previous poultry outbreaks and detections in wild birds.⁶³

6.1.2.7 The US

The US continues to detect H5N1 in animals. A multistate outbreak in dairy cattle (genotypes B3.13 and D1.1) is ongoing – dairy herds in at least 17 states have tested positive over the past year. On 31 January 2025, the US Department of Agriculture-National Veterinary Services Laboratories (USDA-NVSL) confirmed H5N1 clade 2.3.4.4b (genotype D1.1) in a Nevada dairy cow via milk testing.⁶⁴

In late April 2025, the first likely cow-to-human spillover was reported.^{65,66} The H5N1 virus has also been found sporadically in US poultry and wild birds (duck/turkey flocks) in March - April 2025.⁶⁷

6.1.2.8 Canada

The Canadian Food Inspection Agency (CFIA) reported that 518 poultry premises had been affected by H5Nx outbreaks since late 2021, with approximately 14.6 million birds impacted (culled or died). Most outbreaks in 2025 occurred in British Columbia and Alberta, involving both commercial and backyard flocks. Canada has not reported H5N1 in livestock or mammals to date.⁴⁵

A summary of the confirmed avian and zoonotic influenza (HPAI H5N1) reports/outbreaks to date (April 2025), obtained from multiple sources, is summarised in **Table 2**.

Table 2. Summary of confirmed avian and zoonotic Influenza (HPAI H5N1) outbreaks in animals January - April 2025, including virus subtypes, affected species, and official reporting sources.

Location	Species Affected	Virus Strain (subtype)	Date of Confirmation	Source
Cambodia (Kracheh)	Domestic poultry	HPAI H5N1	3 Apr 2025	WOAH ⁵⁹
UK (Yorkshire)	Sheep (on poultry farm)	HPAI H5N1	24 Mar 2025	DEFRA ⁶⁸
USA (Nevada)	Dairy cattle	HPAI H5N1 (clade 2.3.4.4b D1.1)	31 Jan 2025	USDA ⁶⁴

Global updates on COVID-19 and other diseases

2025-R4

April 2025

Location	Species Affected	Virus Strain (subtype)	Date of Confirmation	Source
India (multiple states)	Poultry, wild & domestic mammals	HPAI H5N1	Ongoing	DAHD/PIB ⁵⁸
Niger (Niamey)	Backyard poultry	HPAI H5N1	6 Feb 2025	FAO ⁶⁹
Canada (nationwide)	Poultry (commercial & backyard)	HPAI H5Nx	Active as of 10 Apr 2025	CFIA ⁷⁰

WOAH = World Organisation for Animal Health

DEFRA = The UK Department for Environment, Food and Rural Affairs

USDA = US Department of Agriculture

DAHD/PIB = Indian Department of Animal Husbandry and Dairying/Press Information Bureau

FAO = Food and Agriculture Organization

CFIA = Canadian Food Inspection Agency

6.2 Avian influenza A H7N3

6.2.1 Commercial poultry, Mexico

The Mexican Ministry of Agriculture and Rural Development (SADER) confirmed an outbreak of the highly pathogenic avian influenza A H7N3 (HPAI H7N3) virus on a commercial farm in Nuevo León (northeastern Mexico with borders partly shared with the US [Texas]). Authorities have taken measures to contain the outbreak, including monitoring and sampling in the surrounding area. Poultry producers are urged to strengthen biosecurity measures. The public is encouraged to report any suspicions of the virus. The response aims to protect the poultry industry, ensure food safety, and minimise public health risks. ⁷¹

6.3 Joint Food and Agriculture Organization/World Health Organization/World Organisation for Animal Health public health assessment

Currently, based on available information, FAO/WHO/WOAH assess the global public health risk of influenza A(H5) viruses to be low, while the risk of infection for occupationally exposed persons is low to moderate depending on the risk mitigation measures in place and the local avian influenza epidemiological situation. Transmission between animals continues to occur. A growing number of human infections are being

reported, though still small. Human infections associated with exposure to infected animals or contaminated environments are expected to occur, however, the overall public health impact of such infections at a global level, at present, is considered minor. The assessment could change if and when additional epidemiological or virological information becomes available.⁷²

6.4 Reaction from global experts

Top virologists from >40 countries are raising urgent alarms about the rising threat of the H5N1 avian influenza virus, emphasising its increasing impact on animals and humans and the potential for a pandemic.^{73,74} The key points include:

- **Widespread transmission across North America.**
The HPAI H5N1 has been confirmed across all 50 US states and in Canada. To contain the spread, >168 million poultry have been culled, affecting the agriculture sector, especially where high-density operations and insufficient biosecurity practices contribute to rapid viral spread.
- **Mammalian spillover raises the red flag.**
The H5N1 virus has impacted at least 48 mammal species globally since 2022.^{75,76} The virus has infected >1,000 dairy cow herds across all 50 US states and >70 people in the US, including severe cases and the first confirmed human death, underscoring the virus's ability to jump species. Each new infection will allow for viral gene reassortment, making efficient human transmission possible.
- **Insufficient preparedness measures.**
Current fragmented efforts, including the lack of coordination, the absence of a unified testing infrastructure (robust testing, data sharing and preparedness planning), coupled with limited surveillance, will affect how a country will react in the event of a sustained human transmission (outbreak).

A 10-point pandemic preparedness strategy was offered (paraphrased):

- **Enhanced Surveillance:** Ongoing animal testing, wastewater monitoring, and screening of farm workers.
- **Rapid Genomic Data Sharing:** Accelerated release and analysis of viral sequences to track mutation trends globally.
- **Farm Biosecurity Upgrades:** Universal adoption of PPE and decontamination protocols.
- **Accessible Diagnostics:** Rollout of self-testing kits for farm workers and access to early detection tools.

- Public Health Infrastructure: Funding surge for outbreak detection, contact tracing, and community outreach.
- Phenotype Prediction Tools: Investment in AI and bioinformatics to predict viral traits from genomic data.
- Vaccine R&D: Prioritising rapid development pipelines for both animal and human vaccines.
- Therapeutics Rollout Plans: Preparedness for emergency distribution of antivirals and treatments.
- Clinical Trials Mobilisation: Frameworks for real-time studies on novel virus strains and interventions.
- Global Coordination: International collaboration for research, data sharing, and resource allocation.

Proactive investment, coordination and rapid implementation of a sound strategy in opposition to a reactive stance is required to reduce the risk of a full-scale pandemic.

7.0 Other diseases/current outbreaks:

7.1 Influenza-like virus outbreak, Malaysia

The Malaysian Ministry of Health (MOH) reported 28 cases of influenza-like illness (ILI) among students and staff of an educational institute from Kuala Kuda, Kedah, on 28 April 2025. One hundred and fifty-eight (158) students were reportedly exposed to the illness. They were among the attendees at a 'development camp' (Kem Jati Diri) which was conducted at a recreational centre in Yan District, Kedah, and were there on or after 3 April 2025. The cases were initially reported as an unidentified infectious disease cluster. Six (6) of the 28 cases were tested positive for influenza A, while the rest were regarded as ILI. KKM has urged the public to practice preventive measures, such as handwashing, sanitisation, influenza vaccination, covering the mouth and nose when coughing and sneezing, and wearing masks, especially those at higher risk of infection.⁷⁷

7.2 Mpox

7.2.1 Clade II death: immunocompromised, the Philippines

Two cases of clade II mpox were confirmed by Davao City's Health Office (CHO) following a report from the Department of Health (DOH) Regional Epidemiology and Surveillance Unit. One patient died, unlikely from mpox complications; the person had been severely immunocompromised. Close contacts are being monitored closely. Established protocols to respond to the reports have been implemented.⁷⁸

7.2.2 Updates from the World Health Organization

Data as of 31 March 2025 showed that clade I mpox virus (MPXV) continues to be reported primarily in Africa; 11 countries have reported community. Uganda has been reporting the highest number of confirmed mpox cases globally, with 200 to 300 new cases weekly. To date, the country has detected only clade Ib MPXV.⁷⁹

Globally, from 1 January 2022 through 31 March 2025, a total of 137,892 confirmed cases of mpox, including 317 deaths, were reported to the WHO from 132 countries/territories/areas (hereafter 'countries') in all 6 WHO Regions, with the case fatality ratio (CFR) of 0.2%.

A total of 3,353 new confirmed cases were reported in March 2025, a 12.7% decline from February 2025. Approximately 84.4% of these cases were reported from the African Region, followed by the European Region (8.6%) and the Region of the Americas (5.6%). The European Region reported a monthly increase in cases: 51% for March 2025, compared to February 2025.

Figure 3 summarises the global MPXV clade distribution by country compiled from genome sequencing conducted and reported via different sources.

MPXV clades detected globally

Includes imported cases; known distribution from 1 January 2022 to 20 Apr 2025

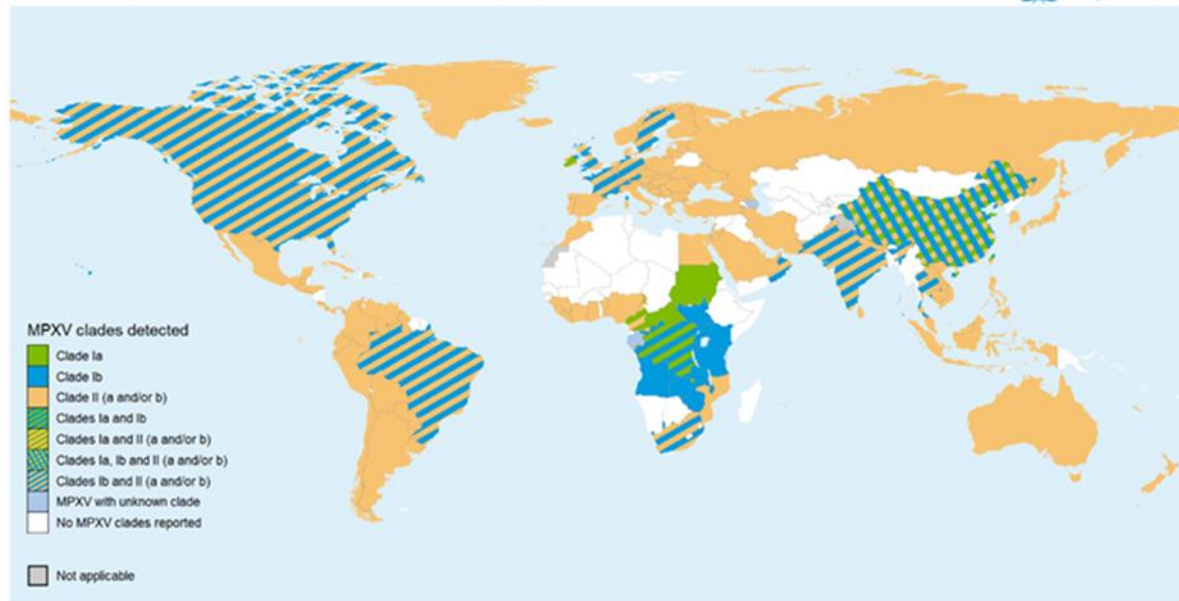


Figure 3. Global MPXV distribution, by country, from 1 January 2022 to 20 April 2025. Since its first detection in September 2023, clade Ib MPXV has been detected in 29 countries, where most of them reported only travel-related cases; infections in individuals who were exposed in countries with community transmission of clade Ib MPXV in Central or Eastern Africa, or who were contacts of travellers returning from these regions. The map and the description were adapted from [multi-country-outbreak-of-mpox--external-situation-report--51.pdf](#).

The Democratic Republic of the Congo (DRC) continues to report the highest number of cumulative confirmed mpox cases in Africa in 2025, even though it has been reporting a decreasing number of confirmed cases recently. This is likely due to a reduction in testing and confirmation capacity. Clades Ia and Ib MPXV continue to circulate in the country.

^{79,80}

Sierra Leone has reported a rising number of confirmed mpox cases, with over 200 new confirmed cases reported during the most recent week, highlighting the increased transmission in the country. Epidemiological investigations are ongoing.^{79,80}

Malawi has reported its first cases of clade Ib mpox, with no known links with travel to other affected countries, suggesting that community transmission of the strain is already ongoing in the country. The first case involved a 30-year-old male who presented with symptoms consistent with mpox on 20 March 2025. A second case, a 33-year-old male,

was identified on 9 April 2025, and the third case is a 38-year-old man identified on 18 April 2025. The former two are among people living with HIV (PLHIV).^{79,80}

China has confirmed a second case of clade Ia mpox linked to travel from the DRC. The adult male began showing symptoms on 25 March 2025, while still in the DRC, where he sought medical attention but was not diagnosed with mpox. He travelled to China on 12 April 2025, still experiencing symptoms, and voluntarily reported them upon arrival the next day. This case is the third recorded importation of clade Ia MPXV from an endemic country, underscoring the epidemic potential of this subclade, which has previously been primarily associated with local transmission in endemic regions. Cases of mpox caused by clade Ia MPXV that were previously reported (one each in Ireland and China) belonged to the lineage that is now causing sustained human-to-human transmission of clade Ia MPXV in the DRC. Genomic investigations are ongoing to determine whether this third case is of the same lineage.^{79,80}

The US reported the detection of clade I MPXV in wastewater from routine event-based surveillance. The first detection was in wastewater samples collected in California from 23 February to 22 March 2025. The second was collected from North Carolina from 23 March and 19 April. These reports are being verified at the time of publication. The US reported four cases of clade Ib mpox: California in November 2024, Georgia in January 2025, and New Hampshire and New York in mid-February 2025. They had all travelled to affected countries in East and Central Africa.⁷⁹

7.3 Ebola (Sudan) virus, update from the World Health Organization

On 26 April 2025, the Ministry of Health (MoH) of Uganda declared the end of the Sudan virus disease (SVD) outbreak after two consecutive incubation periods (a total of 42 days) since the last person confirmed with SVD tested negative for the virus on 14 March 2025. A total of 14 SVD cases (including 12 confirmed cases and two probable cases), including four deaths (two confirmed and two probable), with a case fatality ratio (CFR) of 29%, have been reported during this outbreak. Investigations to determine the source and the scope of the outbreak are ongoing. This is to ensure no hidden chains of transmission exist and to inform future risk reduction efforts.^{81–83}

Sudan virus (SUDV) was first identified in southern Sudan in June 1976. Since then, the virus has emerged periodically. Eight outbreaks have been reported since, 5 in Uganda and three in Sudan, with a varied CFR (41% to 70%). SUDV is enzootic and present in animal reservoirs in the region.⁸³

7.4 Measles

7.4.1 The US

7.4.1.1 Forecast: Tipping point

A Stanford University-led study published in the *Journal of the American Medical Association (JAMA)* projected that the US could experience approximately 11.1 million cases of measles over the next 25 years due to a 10% decline in vaccination rates. Maintaining the current vaccination rates could result in an estimated 851,300 cases, potentially making measles endemic again in the country within two decades. However, the modelling suggested that a (small) 5% increase in vaccination rates can prevent measles from becoming endemic, highlighting the critical importance of improving immunisation rates.^{84,85}

7.4.1.2 Centers for Disease Control and Prevention, update

In 2025, measles cases were reported across multiple jurisdictions in the US. As of 24 April 2025, there have been 11 outbreaks, with a significant portion of cases (93%) linked to these outbreaks. Approximately 97% of these cases involved unvaccinated individuals or those whose vaccination status is unknown. Approximately 30% of cases reported occur in children <5 years old, with 20% of the cases hospitalised. Three fatalities have been reported to date. As of 24 April 2025, a total of 884 confirmed measles cases were reported across 30 jurisdictions (**Figure 4**).⁸⁶

Global updates on COVID-19 and other diseases

2025-R4

April 2025

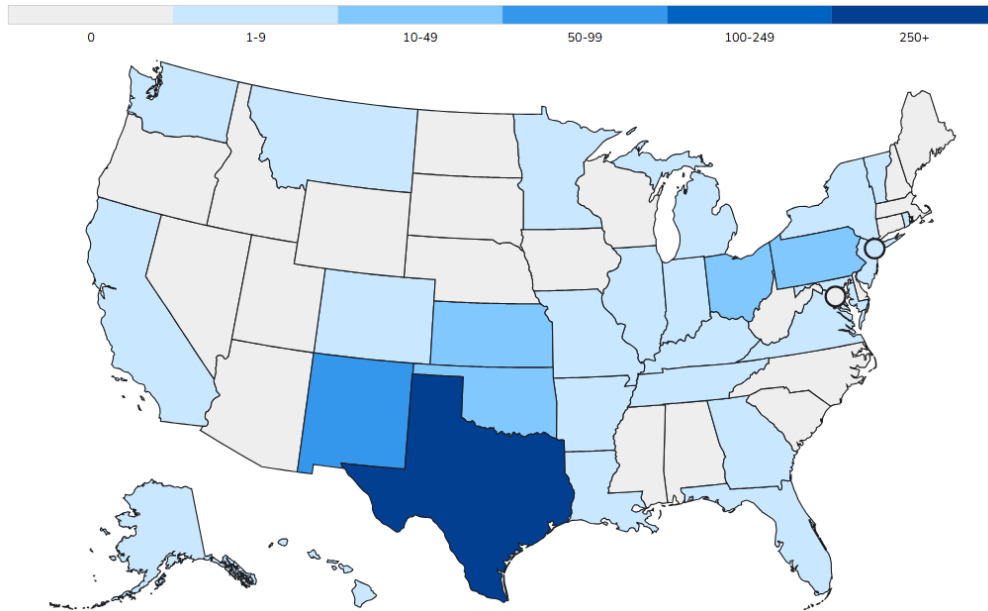


Figure 4. Map of measles cases, as of 24 April 2025. The coloured bar indicates the range of cases reported. The outbreak began in Texas (dark blue in the map) in January 2025. Cases has since been reported in Alaska, Arkansas, California, Colorado, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Montana, New Jersey, New Mexico, New York City, New York State, Ohio, Oklahoma, Pennsylvania, Rhode Island, Tennessee, Vermont, Virginia, and Washington. The map was adapted from [Measles Cases and Outbreaks | Measles \(Rubeola\) | CDC](#).

7.4.2 Canada

The country is currently experiencing a multijurisdictional outbreak which began in October 2024. Initially reported in New Brunswick, the disease has since been reported in 6 other locations (Ontario, Alberta, Manitoba, Prince Edward Island, Quebec, British Columbia and Saskatchewan). Between 6 April and 12 April 2025 (week 15), health authorities in Canada reported 189 new cases (168 confirmed, 21 probable), cumulating to 1,069 cases (916 confirmed) since the beginning of the year, with 972 cases (794 confirmed) linked to the outbreak. Measles has been eliminated in Canada since 1998 (no endemic transmission). However, sporadic cases occur from importation from regions where the disease is circulating. From 1998 – 2004, an average of 91 cases were reported annually in the country, with between 0 and 752 cases reported each year.⁸⁷

7.4.3 Region of the Americas, update from the World Health Organization

From 1 January to 18 April 2025, a total of 2,318 measles cases, including three deaths, have been confirmed in 6 countries in the WHO Region of the Americas, an 11-fold increase compared to the same period in 2024. The majority of cases have occurred among people between 1 to 29 years, who are either unvaccinated or have an unknown vaccination status. Additionally, most cases are imported or linked to importation. The WHO's Public Health Risk Assessment is "High" in the region, especially in countries with low vaccination coverage. This assessment was made based on the following (paraphrased): ⁸⁸

- Ongoing virus circulation from imported cases has led to outbreaks with extended transmission chains, secondary cases, and virus spread to new areas and countries in 2025.
- Suboptimal vaccination coverage persists across the region. In 2023, only 28.6% of countries achieved over 95% coverage for the first Measles-Mumps-Rubella dose (MMR1), and just 16.7% for the second dose (MMR2). Regional coverage was 87% for MMR1 and 76% for MMR2. Data for 2024 is still being consolidated.
- An increasing number of susceptible individuals due to continued low coverage, driven by factors such as the COVID-19 pandemic, vaccine hesitancy, and limited access to healthcare, especially among vulnerable groups such as migrants, displaced persons, and Indigenous populations.

The global risk of measles is currently assessed as moderate due to ongoing transmission in all WHO regions, where immunisation programs are suboptimal in several countries. Factors contributing to this include resource limitations, vaccine hesitancy, political instability, and weaknesses in health systems, leading to gaps in vaccination coverage and pockets of unvaccinated populations that facilitate measles spread.

The WHO recommends maintaining sustained homogeneous coverage of $\geq 95\%$ with the first and second doses of the measles-containing vaccine (MCV). It also advises ensuring broad access to MMR (measles, mumps, rubella) and MR (measles-rubella) vaccines, maintaining adequate vaccine stock and supplies, and strengthening integrated epidemiological surveillance for the timely detection of suspected measles and rubella cases in both public and private healthcare settings. Enhanced surveillance and rapid response capabilities are especially critical in high-traffic border areas to quickly detect and respond to suspected cases.

International travellers are urged to verify and update their measles vaccination status before travel. Those unvaccinated or showing symptoms compatible with measles, especially if exposed to confirmed cases, should consult medical authorities before travel to prevent further spread.

7.4.4 Europe: Update from European Centre for Disease Prevention and Control

7.4.4.1 2024 report: 10-fold increase

Europe reported a 10-fold increase in cases in 2024 compared to the previous year, with a total of 35,212 cases reported with almost 87% reported from Romania. The European Centre for Disease Prevention and Control (ECDC) reported that these cases followed a seasonal pattern after which the typical pattern was not evident (2021-23). Measles activity had started to increase in 2023 following unusually low activity during 2020–2022, coinciding with the COVID-19 pandemic.⁸⁹

Cases were reported among all age groups, however, infants <1 year old were the most affected, with a notification rate of 1,175.4 cases per 1,000,000 population, followed by children <5 years old (688.7 cases per 1,000,000). Fourteen of the 23 measles deaths reported in 2024 involved children <5 years old. Of the cases with known vaccination status, 87% (27,692) were unvaccinated, and a total of 90% of children between 1-4 years were unvaccinated. Children in this age group are those targeted for vaccination.

7.4.4.2 Current situation

Based on data shared by 16 countries, 1,097 cases were reported to the ECDC. A total of 26,222 cases were reported from 1 April 2024 to 31 March 2025; 44% were children <5 years old, and approximately 28% were those <15 years old. Fourteen deaths were reported. Of >24,300 cases with known vaccination status, approximately 86% were unvaccinated.⁹⁰

7.4.5 Taiwan

Measles cases have surged recently, reaching a six-year high with both local transmissions and imported infections. The latest cases involved individuals who contracted the disease overseas, as well as those who were exposed to them. The situation is being monitored closely by public health authorities. The public is urged to remain vigilant regarding possible exposure sites. Officials have also stressed the critical role of vaccination, particularly for children, and advised travellers to maintain proper hygiene and seek medical care if symptoms appear after returning from affected regions.

⁹¹

7.5 Invasive meningococcal disease, Kingdom of Saudi Arabia

On 13 March 2025, the International Health Regulations (IHR) National Focal Point (NFP) for the Kingdom of Saudi Arabia (KSA) notified 11 confirmed cases of invasive meningococcal disease (IMD) to the WHO. Additionally, between 11 February and 18 March 2025, the WHO Eastern Mediterranean Regional IHR contact point received reports – either through notification or bilateral communication with IHR NFPs – 6 isolated cases of IMD involving individuals who had recently returned from Umrah.⁹³

Meningococcal disease remains a global public health concern, particularly in the context of mass gathering events such as Hajj and Umrah. The government of Saudi Arabia regularly issues health requirements for Hajj and Umrah, including vaccination policies. As of 10 March 2025, KSA health authorities estimated that only 54% of international Umrah pilgrims had complied with the meningococcal vaccination requirements. The significant number of pilgrims travelling to KSA from countries with varying levels of meningococcal disease incidence presents a risk of international spread during these gatherings.

Given the recent notification of these cases linked to Umrah, all individuals planning to attend mass gatherings such as Hajj and Umrah are strongly advised to get vaccinated against meningococcal disease at least 10 days before travel.

7.6 World Immunization Week and vaccine-preventable diseases, update from the World Health Organization

Vaccination is a critical part of primary healthcare, offering protection against diseases while linking families to essential services like prenatal care, nutrition, and disease screening. It is considered one of the most cost-effective health interventions, yielding a return of USD54 for every dollar spent, laying the groundwork for long-term prosperity and health security. However, as highlighted during the *World Immunization Week*, held on 24-30 April 2025, the growing threat to immunisation efforts has caused an increasing number of outbreaks of vaccine-preventable diseases globally.⁹⁴

A snapshot captured by the World Health Organisation (WHO) showed that misinformation, population growth, humanitarian crises, and funding cuts jeopardise progress, leaving millions of children, adolescents, and adults at risk of diseases such as measles, meningitis, yellow fever and diphtheria. The impact is mainly seen in low- and middle-income countries (LMIC), causing disruptions not only in the supply chain but also in disease surveillance programmes. This constitutes a global health crisis that requires the continued investment in the '*Big Catch-Up (BCU)*'⁹⁵ initiative launched in June 2023. The United Nations Children's Fund (UNICEF), WHO, and Gavi (The Vaccine

Alliance) have called on parents, the public and politicians to strengthen support for immunisation.⁹⁶

The need for sustained investment in vaccines and immunisation programmes is ever more important now to prevent the resurgence of deadly vaccine-preventable diseases, and countries are urged to honour their commitments to the **Immunization Agenda 2030 (IA2030)**.⁹⁷

The link to WHO's podcast series on vaccines: [WHO's Science in 5 - Vaccines: Myths, facts and what WHO says - 24 April 2025](#), and [WHO's Science in 5 - The truth about vaccine safety - 30 April 2025](#).

7.7 Antibiotic resistance, World Health Organization updates

Antibiotic resistance (AMR) remains a formidable challenge threatening global health security. The WHO, based on 2022 global data from the 2022 Global Antimicrobial Resistance (AMR) and Use Surveillance System (GLASS) and the WHO Access, Watch, Reserve (AWaRe) system (**Table 3**), stated that the antibiotics most responsible for drug resistance are those that are overused.⁹⁸

Table 3. Categories of antibiotics based on the Aware system simplified from [Antibiotics most responsible for drug resistance are overused – WHO report](#).

Category	Description
Access	First- or second-choice treatments for common infections. Safe, low cost, narrow spectrum and low likelihood of causing AMR. The goal is for these to make up at least 70% of all antibiotic use by 2030.
Watch	Broad-spectrum antibiotics, typically more expensive. Often overused and causes resistance.
Reserve	Last-resort antibiotics used only when treating multidrug-resistant infections.

The report is summarised as follows:⁹⁸

- Global antibiotic use varies, with some places using many antibiotics while others have low use, often because people cannot get the medicines they need.
- Many countries still use too many *Watch* antibiotics, speeding up resistance and reducing treatment options.
- Among the challenges with *Reserve* antibiotics is that some areas do not have access to them when they are needed.

The WHO suggested the following:

- Better monitoring to help countries track how antibiotics are used.
- Encourage doctors to choose Access antibiotics first and avoid unnecessary prescriptions.
- Ensure the right antibiotics are prescribed, especially in poorer countries.

Drug resistance makes infections harder to treat, leading to more sickness and death. Stopping antibiotic misuse helps keep them working for everyone.

7.8 World Health Day, 7 April 2025

World Health Day is celebrated annually on 7 April, marking the anniversary of the founding of the World Health Organization in 1948. As with each year, this year's annual campaign draws attention to a specific health topic of concern to people globally: **Healthy beginnings, hopeful futures**. It urges governments and the health community to increase efforts to end preventable maternal and newborn deaths, and to prioritise women's longer-term health and well-being.⁹⁹

To know more, visit [World Health Day 2025](#) and [Episode #136 – Healthy births, saving mothers](#)

7.9 Global pandemic treaty agreed, the World Health Organization

The pandemic treaty was finalised and agreed upon by WHO Member States on 16 April 2025, after more than three years of negotiations. This legally binding treaty aims to enhance global cooperation on pandemic prevention, preparedness, and response, including provisions for equitable sharing of vaccines, drugs, diagnostics, and rapid information dissemination during future pandemics.^{100,101}

Following 13 formal rounds of meetings in 3 years, proposals within the text developed by the Intergovernmental Negotiating Body (INB) affirms the sovereignty of countries to address public health matters within their borders, and provides that nothing in the draft agreement shall be interpreted as providing WHO any authority to direct, order, alter or prescribe national laws or policies, or mandate States to take specific actions, such as ban or accept travellers, impose vaccination mandates or therapeutic or diagnostic measures or implement lockdowns.

The treaty has not yet been formally signed or entered into force as yet. The finalised draft agreement was submitted for consideration and adoption at the upcoming Seventy-eighth World Health Assembly (WHA) scheduled for May 2025. The treaty will enter into force one month after at least 60 countries have ratified it.¹⁰²

7.10 Global Outbreak Alert and Response Network turns 25

The Global Outbreak Alert and Response Network (GOARN), an initiative coordinated by the WHO, turned 25 on 28 April 2025. It was created in response to the need for better coordination during global health emergencies by ensuring experts are well-trained and equipped with the right skills before being deployed to where they are needed the most (**Figure 4**). The network now consists of >310 institutions (national public health agencies, non-governmental agencies, United Nations (UN) agencies, academic and technical organisations) since its inception in April 2000, becoming the forefront of the global fight against health emergencies. It does so by leveraging the expertise of global partners: facilitating alerts, deploying rapid support capacities, and strengthening capacities. It has significantly enhanced country-level operations and strengthened regional development, playing a critical role in health preparedness and response.¹⁰³

“..from a visionary concept to an indispensable network in the global health emergency landscape..”

Ray R. Arthur, PhD, Director, Global Disease Detection Operations Center, CDC (retired) and Former Chair of the GOARN Steering Committee.

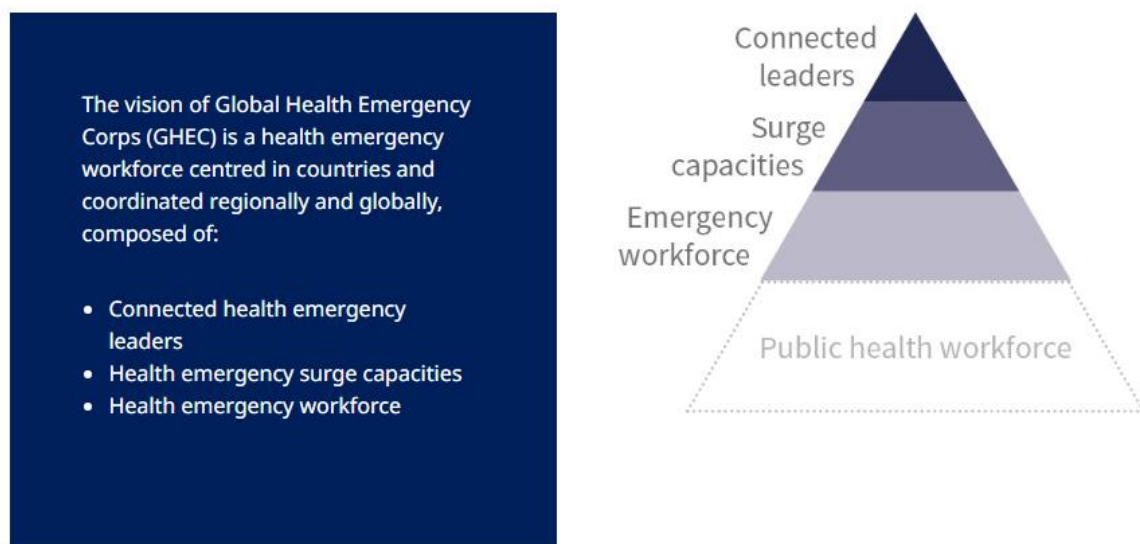


Figure 4. GOARN plays a vital role in the Global Health Emergency Corps (GHEC) framework to enhance health emergency workforce capacity within health emergency prevention, preparedness, response and resilience (HEPR) work, and a collaboration platform for countries and health emergency networks. The description and image were adapted from [Global Health Emergency Corps](#) and [Global Health Emergency Corps](#).

The WHO led a 2-day pandemic scenario called *Exercise Polaris* on 3 and 4 April 2025, which simulated an outbreak of a fictional virus spreading across the world. It involved >15 countries and >20 regional health agencies, health emergency networks and other partners to test, for the first time, the GHEC's framework for health emergencies. The exercise demonstrated the potential of nations working together with urgency and unity, strengthened by well-connected partners – a clear message that the world is now better prepared than before (in tackling a major health outbreak).¹⁰⁴

8.0 Implications for Sarawak based on the views of SIDC

Cases of zoonotic TB underscore the importance of the stringent use of personal PPE among high-risk occupational groups and the implementation of an enhanced surveillance system to report zoonotic TB. It further highlights the need for a One Health approach and proactive surveillance, emphasising the necessity of refining and strengthening surveillance systems for precise monitoring and an effective response.⁷ The contribution of zoonotic TB or members of the *Mycobacterium* complex to the pool of TB cases should also be investigated.

In Malaysia, where schistosome species such as *S. haematobium*, *S. japonicum*, *S. malayensis*, and *S. mansoni* have been reported, the Malawi study raises important concerns. In particular, *S. malayensis* is a zoonotic species maintained in wildlife reservoirs, which complicates control efforts.¹⁰⁵ The emergence or introduction of hybrid schistosomes, as seen in Malawi, could similarly alter transmission dynamics in Malaysia, potentially leading to infections that are more difficult to detect using standard diagnostic methods focused on typical egg excretion patterns. This could undermine ongoing efforts to control or eliminate schistosomiasis in the country.

Therefore, it is essential to strengthen schistosomiasis surveillance by incorporating molecular diagnostics and monitoring both human and animal hosts to detect hybrid or zoonotic schistosome species early. Integrated control strategies that address animal reservoirs, snail vectors, and environmental sanitation remain critical to prevent zoonotic spillover and sustain progress toward elimination. The findings from Malawi serve as a timely reminder that hybridisation and zoonotic transmission can complicate schistosomiasis control and must be factored into regional public health strategies.

In Sarawak, natural *P. cynomolgi* infections in humans are often co-infected with *P. knowlesi*. While *P. knowlesi* infections can be severe, infections caused by the former

typically cause mild or asymptomatic illness, underscoring the complex malaria epidemiology in the region. Additionally, asymptomatic infections of other zoonotic malaria parasites, such as *P. cf. inui* and *P. simiovale* have also been reported among local populations.¹⁰⁶ DNA of these parasites has been detected in local mosquito vectors from the Barbirostris, Leucospyrus and Umbrosus groups, particularly *An. donaldi*, *An. balabacensis*, *An. latens*, *An. roperi*, and *An. collessi*, suggesting active transmission potential.¹⁰⁷ While confirmed human cases remain rare, with only sporadic detections to date, given Sarawak's evolving ecological landscape, there is a need for enhanced molecular diagnostics, comprehensive entomological studies, and integrated surveillance systems to monitor and control the spread of these zoonotic malaria parasites.

No one knows when the next pandemic will be.

Are we prepared for another large-scale respiratory outbreak of zoonotic origin? Do we have the tools and the resources to handle an outbreak, and how fast can these be mobilised? With COVID-19 not too far behind us, these are the questions that come to mind when the words 'pandemic or outbreak' are uttered. Irrespective of the species involved (animals or humans), there is a need to balance economic risk with zoonotic and public health risk when strategising against these diseases.

The H5N1 virus outbreak in the US is a strong indicator of a virus with pandemic potential, despite no signs of human-to-human spread. The infection can present (or manifest) differently in humans, underscoring the need to keep abreast with the clinical presentation of the disease being reported worldwide. To reiterate the message from FAO, the WHO and WOA, H,

"..the risk of a human pandemic remains low, but anytime a virus like highly pathogenic avian influenza (HPAI) mutates and passes between animal species, precautions should be taken.." 72

Alarm bells should be ringing, particularly as monitoring/surveillance from the US, where the large outbreak is still ongoing, may not be as optimal as before. The use of One Health multisectoral regional networks needs to be stronger to compensate for this.

Other viruses, such as members of the coronavirus family, cannot be discounted as potential pathogens capable of causing outbreaks. Disease X could even be a pathogen of non-viral origin, such as bacteria and fungi; some of which have shown AMR, making the choice of treatment difficult.

Reference

1. Mail, M. Malaysia closes the book on Covid-19 tomorrow. <https://www.msn.com/en-my/news/other/malaysia-closes-the-book-on-covid-19-tomorrow/ar-AA1DTuK?ocid=BingNewsSerp> (1745995352).
2. CHP investigates severe paediatric case of COVID-19 co-infected with human metapneumovirus. <https://www.info.gov.hk/gia/general/202504/23/P2025042300628.htm>.
3. Power BI Report.
<https://app.powerbi.com/view?r=eyJrljoiNzc4YTlxZjQtM2E1My00YjYxLWlxMDItNzEzMjkyY2E1MzU1liwidCI6ImY2MTBjMGI3LWJkMjQtNGl3OS04MTBiLTNkYzI4MGFmYjU5MCI6ImMiOjh9>.
4. COVID-19 cases | WHO COVID-19 dashboard. *datadot*
<https://data.who.int/dashboards/covid19/cases>.
5. COVID-19 circulation | WHO COVID-19 dashboard. *datadot*
<https://data.who.int/dashboards/tuberculosis/tuberculosis-epidemiological-profile/covid-vums-line-chart>.
6. Korea's first case of bovine tuberculosis in a human confirmed by health authorities. <https://koreajoongangdaily.joins.com/news/2025-04-17/national/socialAffairs/Koreas-first-case-of-bovine-tuberculosis-in-a-human-confirmed-by-health-authorities/2287526> (2025).
7. Lee, J.-Y., Pyo, S. W., Kim, J. & Park, Y.-J. First report of human *Mycobacterium bovis* infection in a veterinary laboratory worker in the Republic of Korea. *Osong Public Health Res. Perspect.* (2025) doi:10.24171/j.phrp.2024.0343.
8. Lee, H. Y., Kwon, Y., Lee, S.-E., Kim, J. & Choi, H. A *Mycobacterium bovis* outbreak among exhibition animals at a zoo in the Republic of Korea: the first contact investigation of zoonotic tuberculosis. *Osong Public Health Res. Perspect.* **15**, 248–259 (2024).
9. mouhcine. جماعة إكثيون تسجل إصابات بالسل. *Hespress* - <https://www.hespress.com/1546147-جماعة-إكثيون-تسجل-إصابات-بالسل.html> (2025).
10. 24 برلمانية تحذر من تزايد حالات السل اللمفاوي ومن إمكانية انتقاله جراء عدوى السل البقري. <https://alyaoum24.com/1960265.html>.
11. Alert ID 8723782 BOVINE TUBERCULOSIS - MOROCCO: (DRAA-TAFILALET) HUMAN, UNPASTEURIZED DAIRY,. <https://www.promedmail.org/>.
12. Mammalian tuberculosis. *WOAH - World Organisation for Animal Health*
<https://www.woah.org/en/disease/mammalian-tuberculosis/>.
13. Sawyer, J., Rhodes, S., Jones, G. J., Hogarth, P. J. & Vordermeier, H. M. *Mycobacterium bovis* and its impact on human and animal tuberculosis. *J. Med. Microbiol.* **72**, 001769 (2023).
14. O'Ferrall, A. M. *et al.* Unexpected Zoonotic and Hybrid Schistosome Egg Excretion Patterns, Malawi, 2024 - Volume 31, Number 5—May 2025 - Emerging Infectious Diseases journal - CDC. doi:10.3201/eid3105.241757.

Global updates on COVID-19 and other diseases

2025-R4

April 2025

15. World Malaria Day. <https://www.who.int/campaigns/world-malaria-day>.
16. WHO calls for revitalized efforts to end malaria. <https://www.who.int/news/item/24-04-2025-who-calls-for-revitalized-efforts-to-end-malaria>.
17. Bykersma, A. The New Zoonotic Malaria: Plasmodium cynomolgi. *Trop. Med. Infect. Dis.* **6**, 46 (2021).
18. Jeyaprakasam, N. K., Phang, W. K., Shahari, S. & Vythilingam, I. Plasmodium cynomolgi: potential emergence of new zoonotic malaria in Southeast Asia. *Parasit. Vectors* **18**, 151 (2025).
19. Dengue Outbreaks. <https://www.vax-before-travel.com/dengue-outbreaks>.
20. Global dengue surveillance. https://worldhealthorg.shinyapps.io/dengue_global/.
21. Gutiérrez, L. A. & <https://www.facebook.com/pahowho>. PAHO/WHO Data - Dengue fever cases | PAHO/WHO. *Pan American Health Organization / World Health Organization* <https://www3.paho.org/data/index.php/en/mnu-topics/indicadores-dengue-en/dengue-nacional-en/252-dengue-pais-ano-en.html> (2015).
22. iDengue_Version 3.0. https://idengue.mysa.gov.my/ide_v3/.
23. Herriman, R. Philippines: Quezon City dengue outbreak rises by 1,000 cases in two weeks. *Outbreak News Today* <https://outbreaknewstoday.substack.com/p/philippines-quezon-city-dengue-outbreak> (2025).
24. News, S. U., GMA Integrated. Dengue cases in Quezon City projected to rise until April 2025. *GMA News Online* <https://www.gmanetwork.com/news/topstories/metro/937563/dengue-cases-in-quezon-city-projected-to-rise-until-april-2024/story/> (2025).
25. Dengue Cases. <https://www.nea.gov.sg/dengue-zika/dengue/dengue-cases>.
26. q1-dengue-surveillance-data-jan-to-mar-2025.pdf. <https://www.nea.gov.sg/docs/default-source/default-document-library/q1-dengue-surveillance-data-jan-to-mar-2025.pdf>.
27. Kemenkes Imbau Masyarakat Waspadai Genangan Air Penyebab DBD. *Tribrata News* <https://tribratanews.polri.go.id/blog/nasional-3/kemenkes-imbau-masyarakat-waspadai-genangan-air-penyebab-dbd-setelah-banjir-85248> (01:35:34.314935).
28. National committee approves measures for disease control. *nationthailand* <https://www.nationthailand.com/health-wellness/40047234> (2025).
29. CDC - DPDx - Lymphatic Filariasis. <https://www.cdc.gov/dpdx/lymphaticfilariasis/index.html> (2019).
30. Lymphatic filariasis. <https://www.who.int/news-room/fact-sheets/detail/lymphatic-filariasis>.

Global updates on COVID-19 and other diseases

2025-R4

April 2025

31. Global Programme to Eliminate Lymphatic Filariasis.
<https://www.who.int/teams/control-of-neglected-tropical-diseases/lymphatic-filariasis/global-programme-to-eliminate-lymphatic-filariasis>.
32. Guideline – Alternative mass drug administration regimens to eliminate lymphatic filariasis. <https://www.who.int/publications/i/item/9789241550161>.
33. BERNAMA. Malaysia capai kadar prevalen antibodi filariasis kurang dua peratus pada 2022. *BERNAMA* <https://www.bernama.com/bm/news.php?id=2160307> (2023).
34. PEFLK. <https://sites.google.com/moh.gov.my/peflk/home>.
35. Lymphatic filariasis: Infection prevalence less than 2pc in 125 sub-districts in 2022, says Dr Noor Hisham. *Malay Mail* <https://www.malaymail.com/news/malaysia/2023/01/30/lymphatic-filariasis-infection-prevalence-less-than-2pc-in-125-sub-districts-in-2022-says-dr-noor-hisham/52600> (2023).
36. PEFLK - Dashboard Filariasis 2025.
<https://sites.google.com/moh.gov.my/peflk/dashboard-filariasis-2025>.
37. Macron promises vaccines as chikungunya kills baby on Reunion Island. *RFI* <https://www.rfi.fr/en/france/20250423-macron-promises-vaccines-as-chikungunya-kills-baby-on-reunion-island> (2025).
38. Chikungunya outbreak spreads on Reunion island | CIDRAP.
<https://www.cidrap.umn.edu/chikungunya/chikungunya-outbreak-spreads-reunion-island> (2025).
39. Chikungunya à La Réunion : une épidémie d'ampleur qui exige une vigilance renforcée - Université de Montpellier. <https://www.umontpellier.fr>
<https://www.umontpellier.fr/en/articles/chikungunya-a-la-reunion-une-epidemie-dampleur-qui-exige-une-vigilance-renforcee/> (2025).
40. Chikungunya in Réunion - Level 2 - Practice Enhanced Precautions - Travel Health Notices | Travelers' Health | CDC. <https://wwwnc.cdc.gov/travel/notices/level2/chikungunya-reunion>.
41. Vazeille, M. *et al.* Two Chikungunya Isolates from the Outbreak of La Reunion (Indian Ocean) Exhibit Different Patterns of Infection in the Mosquito, *Aedes albopictus*. *PLoS ONE* **2**, e1168 (2007).
42. Ligon, B. L. Reemergence of an Unusual Disease: The Chikungunya Epidemic. *Semin. Pediatr. Infect. Dis.* **17**, 99–104 (2006).
43. Ceruti, A., Kobialka, R. M., Abd El Wahed, A. & Truyen, U. African Swine Fever: A One Health Perspective and Global Challenges. *Animals* **15**, 928 (2025).
44. ASF situation in Asia & Pacific update. *Animal Health* <https://www.fao.org/animal-health/situation-updates/asf-in-asia-pacific/en>.

45. Sarawak bans import of live pigs and pork products from Sabah after African swine fever outbreak | Malay Mail. <https://www.malaymail.com/news/malaysia/2025/01/16/sarawak-bans-import-of-live-pigs-and-pork-products-from-sabah-after-african-swine-fever-outbreak/163442>.
46. Development of pig breeding in the new situation. <https://khuyennong.lamdong.gov.vn/thong-tin-nong-nghiep/chan-nuoi/4123-ph%C3%A1t-tri%E1%BB%83n-ch%C4%83n-nu%C3%B4i-l%E1%BB%A3n-trong-t%C3%ACnh-h%C3%ACnh-m%E1%BB%9Bi>.
47. [돼지와사람] [ASF 실시간 현황판] 감염멧돼지 23일 1건(안동) 추가...4월 누적 6건. <http://www.pigpeople.net/news/article.html?no=12681>.
48. Public Notification_ASF_April 2025_Dagana. https://www.moal.gov.bt/wp-content/uploads/2025/04/Public-Notification_ASF_April-2025_Dagana.pdf.
49. IANS. Mizoram on high alert as African Swine Fever resurfaces. *National Herald* <https://www.nationalheraldindia.com/national/mizoram-on-high-alert-as-african-swine-fever-resurfaces> (2024).
50. van den Born, E. *et al.* African swine fever virus vaccine strain Asfv-G-ΔI177L reverts to virulence and negatively affects reproductive performance. *Npj Vaccines* **10**, 1–8 (2025).
51. Vietnam suspends African swine fever vaccine after pig deaths. *Reuters* (2022).
52. Nguyen, T. C. *et al.* An African swine fever vaccine-like variant with multiple gene deletions caused reproductive failure in a Vietnamese breeding herd. *Sci. Rep.* **15**, 14919 (2025).
53. Avian Influenza A(H5N1) - Mexico. <https://www.who.int/emergencies/disease-outbreak-news/item/2025-DON564>.
54. ONLINE T. T. TP.HCM phát hiện ca viêm não do vi rút cúm gia cầm H5N1 hiếm gặp. *TUOI TRE ONLINE* <https://tuoitre.vn/tp-hcm-phat-hien-ca-viem-nao-do-virut-cum-gia-cam-h5n1-hiem-gap-20250418194944565.htm> (2025).
55. 충남 아산 토종닭 농장서 고병원성 AI 확진...전국 47번째. 한국아이닷컴 <https://www.hankooki.com/news/articleView.html?idxno=248604> (2025).
56. Alert ID: 8723800 AVIAN INFLUENZA (52): SOUTH KOREA (SOUTH CHUNGCHONG) POULTRY, HPAI H5N1, SPREAD. <https://www.promedmail.org/>.
57. WAHIS Event ID:5754. <https://wahis.woah.org/#/in-review/5754?fromPage=event-dashboard-url>.
58. Government and Poultry Industry Collaborate to Prevent Bird Flu Outbreaks. <https://pib.gov.in/pib.gov.in/Pressreleaseshare.aspx?PRID=2119198>.
59. WAHIS. <https://wahis.woah.org/#/home>.
60. MAA 2025-03: Egg and egg products: *AMENDED* All Markets: Notification of disease detection - Update 17: Highly pathogenic avian influenza (H7N8) detected on poultry egg farm

in Victoria - February 2025 - DAFF. <https://www.agriculture.gov.au/biosecurity-trade/export/controlled-goods/eggs/egg-notices/2025-03> (2025).

61. Industries, M. for P. Avian influenza, HPAI, bird flu, risk to NZ | NZ Government. *Avian influenza, HPAI, bird flu, risk to NZ | NZ Government* <https://www.mpi.govt.nz/biosecurity/pest-and-disease-threats-to-new-zealand/animal-disease-threats-to-new-zealand/high-pathogenicity-avian-influenza/about-avian-influenza-and-the-risk-to-nz/> (2025).

62. Influenza of avian origin confirmed in a sheep in Yorkshire. *GOV.UK* <https://www.gov.uk/government/news/influenza-of-avian-origin-confirmed-in-a-sheep-in-yorkshire>.

63. Bird flu (avian influenza): latest situation in England. *GOV.UK* <https://www.gov.uk/government/news/bird-flu-avian-influenza-latest-situation-in-england> (2025).

64. APHIS Confirms D1.1 Genotype in Dairy Cattle in Nevada | Animal and Plant Health Inspection Service. <https://www.aphis.usda.gov/news/program-update/aphis-confirms-d11-genotype-dairy-cattle-nevada-0>.

65. Brock, N. *et al.* Early Release - Avian Influenza A(H5N1) Isolated from Dairy Farm Worker, Michigan - Volume 31, Number 6—June 2025 - Emerging Infectious Diseases journal - CDC. doi:10.3201/eid3106.250386.

66. Uyeki, T. M. *et al.* Highly Pathogenic Avian Influenza A(H5N1) Virus Infection in a Dairy Farm Worker. *N. Engl. J. Med.* **390**, 2028–2029 (2024).

67. CDC. Current Situation: Bird Flu in Dairy Cows. *Avian Influenza (Bird Flu)* <https://www.cdc.gov/bird-flu/situation-summary/mammals.html> (2025).

68. Influenza of avian origin confirmed in a sheep in Yorkshire. *GOV.UK* <https://www.gov.uk/government/news/influenza-of-avian-origin-confirmed-in-a-sheep-in-yorkshire>.

69. Sub-Saharan Africa HPAI. *Animal Health* <https://www.fao.org/animal-health/situation-updates/sub-saharan-africa-hpai/en>.

70. Agency, C. F. I. Status of ongoing avian influenza response by province. <http://inspection.canada.ca/en/animal-health/terrestrial-animals/diseases/reportable/avian-influenza/latest-bird-flu-situation/status-ongoing-response> (2023).

71. AH7N3 avian influenza alert on Nuevo León farm. <https://losnoticieristas.com/post/793412/sader-confirma-brote-de-influenza-aviar-ah7n3-en-granja-de-nuevo-leon/> (2025).

72. Updated joint FAO/WHO/WOAH public health assessment of recent influenza A(H5) virus events in animals and people. [https://www.who.int/publications/m/item/updated-joint-fao-who-woah-public-health-assessment-of-recent-influenza-a\(h5\)-virus-events-in-animals-and-people_apr2025](https://www.who.int/publications/m/item/updated-joint-fao-who-woah-public-health-assessment-of-recent-influenza-a(h5)-virus-events-in-animals-and-people_apr2025).

Global updates on COVID-19 and other diseases

2025-R4

April 2025

73. Bartlett, M. L. *et al.* Enhancing the response to avian influenza in the US and globally. *Lancet Reg. Health – Am.* **0**, (2025).
74. Network, G. V. Global Virus Network Issues Urgent Call to Action to Mitigate the Rising Threat of H5N1 Avian Influenza. *GlobeNewswire News Room*
<https://www.globenewswire.com/news-release/2025/04/28/3069774/0/en/Global-Virus-Network-Issues-Urgent-Call-to-Action-to-Mitigate-the-Rising-Threat-of-H5N1-Avian-Influenza.html> (2025).
75. Influenza: A(H5N1). <https://www.who.int/news-room/questions-and-answers/item/influenza-h5n1>.
76. How is bird flu affecting animal populations? <https://www.gavi.org/vaccineswork/how-bird-flu-affecting-animal-populations>.
77. Malay Mail. MOH confirms 28 cases of Influenza-Like Illness at Kuala Muda school. *Malay Mail* <https://www.malaymail.com/news/malaysia/2025/04/28/moh-confirms-28-cases-of-influenza-like-illness-at-kuala-muda-school/174823> (2025).
78. Limos, R. P., Allen. 2 cases of monkeypox detected in Davao City. *The Manila Times*
<https://www.manilatimes.net/2025/04/20/regions/2-cases-of-monkeypox-detected-in-davao-city/2095317> (2025).
79. Multi-country outbreak of mpox, External situation report #51 - 29 April 2025.
<https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report--51---29-april-2025>.
80. Organization, W. H. Global Mpox Trends.
https://worldhealthorg.shinyapps.io/mpx_global/ (2025).
81. Ministry of Health- Uganda (@MinofHealthUG) / X. X (formerly Twitter)
<https://x.com/minofhealthug> (2020).
82. Uganda declares end of Ebola outbreak | WHO | Regional Office for Africa.
<https://www.afro.who.int/countries/uganda/news/uganda-declares-end-ebola-outbreak> (2025).
83. Sudan virus disease – Uganda. <https://www.who.int/emergencies/disease-outbreak-news/item/2025-DON566>.
84. Kiang, M. V., Bubar, K. M., Maldonado, Y., Hotez, P. J. & Lo, N. C. Modeling Reemergence of Vaccine-Eliminated Infectious Diseases Under Declining Vaccination in the US. *JAMA* (2025) doi:10.1001/jama.2025.6495.
85. US at tipping point for return of endemic measles | Reuters.
https://www.reuters.com/business/healthcare-pharmaceuticals/us-tipping-point-return-endemic-measles-2025-04-24/?utm_source=Sailthru&utm_medium=Newsletter&utm_campaign=Health-Rounds&utm_term=042425&lctg=60cc7990b9e47812d22f7647.

Global updates on COVID-19 and other diseases

2025-R4

April 2025

86. CDC. Measles Cases and Outbreaks. *Measles (Rubeola)*
<https://www.cdc.gov/measles/data-research/index.html> (2025).
87. Canada, P. H. A. of. Measles and Rubella Weekly Monitoring Report — Canada.ca.
<https://health-infobase.canada.ca/measles-rubella/> (2025).
88. Measles – Region of the Americas. <https://www.who.int/emergencies/disease-outbreak-news/item/2025-DON565>.
89. Measles - Annual Epidemiological Report for 2024.
<https://www.ecdc.europa.eu/en/publications-data/measles-annual-epidemiological-report-2024> (2025).
90. report.knit. <https://measles-rubella-monthly.ecdc.europa.eu/>.
91. 聯合新聞網. 麻疹病例+4 再增越南境外、2男嬰在診所群聚接觸中鏢. 聯合新聞網
<https://udn.com/news/story/7266/8675880>.
92. Behrens, L., Cherry, J. D., Heininger, U. & Group†, for the S. M. I. A. S. The Susceptibility to Other Infectious Diseases Following Measles During a Three Year Observation Period in Switzerland. *Pediatr. Infect. Dis. J.* **39**, 478 (2020).
93. Invasive meningococcal disease - Kingdom of Saudi Arabia.
<https://www.who.int/emergencies/disease-outbreak-news/item/2025-DON563>.
94. Increases in vaccine-preventable disease outbreaks threaten years of progress, warn WHO, UNICEF, Gavi. <https://www.who.int/news/item/24-04-2025-increases-in-vaccine-preventable-disease-outbreaks-threaten-years-of-progress--warn-who--unicef--gavi>.
95. The Big Catch-Up: An Essential Immunization Recovery Plan for 2023 and Beyond.
<https://www.who.int/publications/i/item/9789240075511>.
96. The impact of suspensions and reductions in health official development assistance on health systems. <https://www.who.int/publications/m/item/the-impact-of-suspensions-and-reductions-in-health-official-development-assistance-on-health-systems>.
97. Lee, A. Immunization Agenda 2030. *Immunization Agenda 2030*
<https://www.immunizationagenda2030.org/>.
98. Antibiotics most responsible for drug resistance are overused – WHO report.
<https://www.who.int/news/item/29-04-2025-antibiotics-most-responsible-for-drug-resistance-are-overused---who-report>.
99. World Health Day 2025. <https://www.who.int/campaigns/world-health-day/2025>.
100. WHO Member States conclude negotiations and make significant progress on draft pandemic agreement. <https://www.who.int/news/item/16-04-2025-who-member-states-conclude-negotiations-and-make-significant-progress-on-draft-pandemic-agreement>.
101. Bieber, C. First global pandemic treaty agreed — without the US. *Nature* (2025)
doi:10.1038/d41586-025-00839-0.

Global updates on COVID-19 and other diseases

2025-R4

April 2025

102. Global pandemic treaty finalized, without U.S., in 'a victory for multilateralism'. <https://www.science.org/content/article/global-pandemic-treaty-finalized-without-us-victory-multilateralism>.
103. GOARN marks 25 years of advancing global health emergency preparedness and response. <https://www.who.int/news/item/28-04-2025-goarn-marks-25-years-of-advancing-global-health-emergency-preparedness-and-response>.
104. WHO brings countries together to test collective pandemic response. <https://www.who.int/news/item/04-04-2025-who-brings-countries-together-to-test-collective-pandemic-response>.
105. Chuah, C., Gobert, G. N., Latif, B., Heo, C. C. & Leow, C. Y. Schistosomiasis in Malaysia: A review. *Acta Trop.* **190**, 137–143 (2019).
106. Yap, N. J. *et al.* Natural Human Infections with *Plasmodium cynomolgi*, *P. inui*, and 4 other Simian Malaria Parasites, Malaysia - Volume 27, Number 8—August 2021 - Emerging Infectious Diseases journal - CDC. doi:10.3201/eid2708.204502.
107. Ang, J. X. D. *et al.* New vectors in northern Sarawak, Malaysian Borneo, for the zoonotic malaria parasite, *Plasmodium knowlesi*. *Parasit. Vectors* **13**, 472 (2020).