المركز الخليجي للوقاية من الأمراض ومكافحتها
Gulf Center for Disease Prevention and Control

مجلس الصحة
لدول مجلس التعاون
Gulf Health Council

Monthly Epidemic Intelligence Report

Issue 15

March 2025

Definitions

The below is a list of commonly referred to terms and keywords in the monthly reports.

Gulf Public Health Emergency Network (PHEN)

A group of technical individuals within GCC health authorities, nominated to represent each GCC country. The composition typically includes International Health Regulations Focal Point, Ministry of Health Communicable Disease Directors and National Public Health Laboratory Directors or appointed representatives on their behalf. The Gulf CDC serves as the Network's secretariat with the PHE Department Director chairing the network meetings.

Hazard

A source/incident that has the potential to cause morbidity (including injury) or mortality in an exposed human population.

Signal

An incident/situation involving a hazard that has occurred. Signals are typically news/updates identified through Event-Based Surveillance and Indicator-Based Surveillance, utilizing both official and non-official sources. Signals can be of a disease origin or a CRNE (Chemical, Radiological, Nuclear, or Environmental) origin.

Potential Threat

Any threat that has been confirmed by the PHEN to have the potential to pose a near-future risk to the GCC countries' populations and could be monitored closely by Gulf CDC for 2 weeks.

Event of Regional Interest

Any threat, inside or outside the GCC, that has been identified by the Public Health Emergency Network to pose a certain type of risk for the GCC countries' public health. For these threats, Gulf CDC produces regular risk assessments and recommendations for their control, as well as enhances daily monitoring of it to provide regular situational updates to the GCC countries.

Rapid Risk Assessment

A prompt evaluation of the level of health risk in relation to a verified acute event within a short time frame, mainly for situation update, risk level determination and recommendation to support the GCC countries in risk communication and management.

GULF CDC Risk Scale					
Negligible	**Very Low**	**Low**	**Moderate**	**High**	**Critical**

Country names in this report are as per the UN list

Summary of the Month

This monthly report provides an overview of the signals, potential threats, and specifically Events of Regional Interest detected and identified through the Gulf CDC Epidemic Intelligence system during the month of **March 2025** (February 24 – March 23, 2025).*

63	1	2	2
Disease Signals	CRNE Signal	Potential Threats	Events of Regional Interest

Executive Summary

Disease Signals This month, the epidemic intelligence team at Gulf CDC detected 63 infectious disease signals. Of these, 19% were of poliovirus, 17% were of measles, 6% were of mpox, and 6% were of cholera. 1.5% of signals were detected in the GCC countries (1 signal related to MERS-CoV in Saudi Arabia) and 3% were detected in a neighboring Gulf peninsula country, Yemen (1 signal for dengue and measles, each).

CRNE Signals This month, the epidemic intelligence team at Gulf CDC detected 1 CRNE signal: an infectious environmental sample of poliovirus (cVDPV2) in Cameroon.

Potential Threats the Gulf CDC monitored and closed 2 potential threats in March: Marburg in Tanzania and acute inflammatory demyelinating polyneuropathy (Guillain-Barré Syndrome) in India.

Events of Regional Interest the Gulf CDC continued monitoring 2 events of regional interest in March: Highly pathogenic avian influenza H5N1 globally and mpox globally.

* Monthly reports cover data from the 24th of the previous month to the 23rd of the reported month, ensuring there is no gap in reported data.

The details of the detected signals and identified threats are shared weekly with the GCC Member States' technical representatives in the Gulf Public Health Emergency Network (PHEN) (available on this link) and are presented and discussed in weekly roundtable discussions. These are often verified through secondary research or communication with regional and international partners. In consultation with the PHEN members, a potential threat is escalated to an Event of Regional Interest based on its anticipated potential for causing a public health emergency in the GCC region.

Signals

The Gulf CDC monitors the globe for daily, weekly, and monthly disease signals. Based on Gulf CDC analysis, certain signals may be designated as threats and/or events of regional concern, depending on their risk level, impact, and likelihood. As outbreaks evolve, new diseases may be added to this list. Some diseases may also be removed if the risk they pose reduces below our threshold.

Potential threats are identified based on several considerations such as high connectivity between reporting country and the GCC countries, level of transmissibility of pathogens, vulnerability degree of GCC populations to the identified hazard, capacity levels of GCC health systems to respond to the identified hazard.

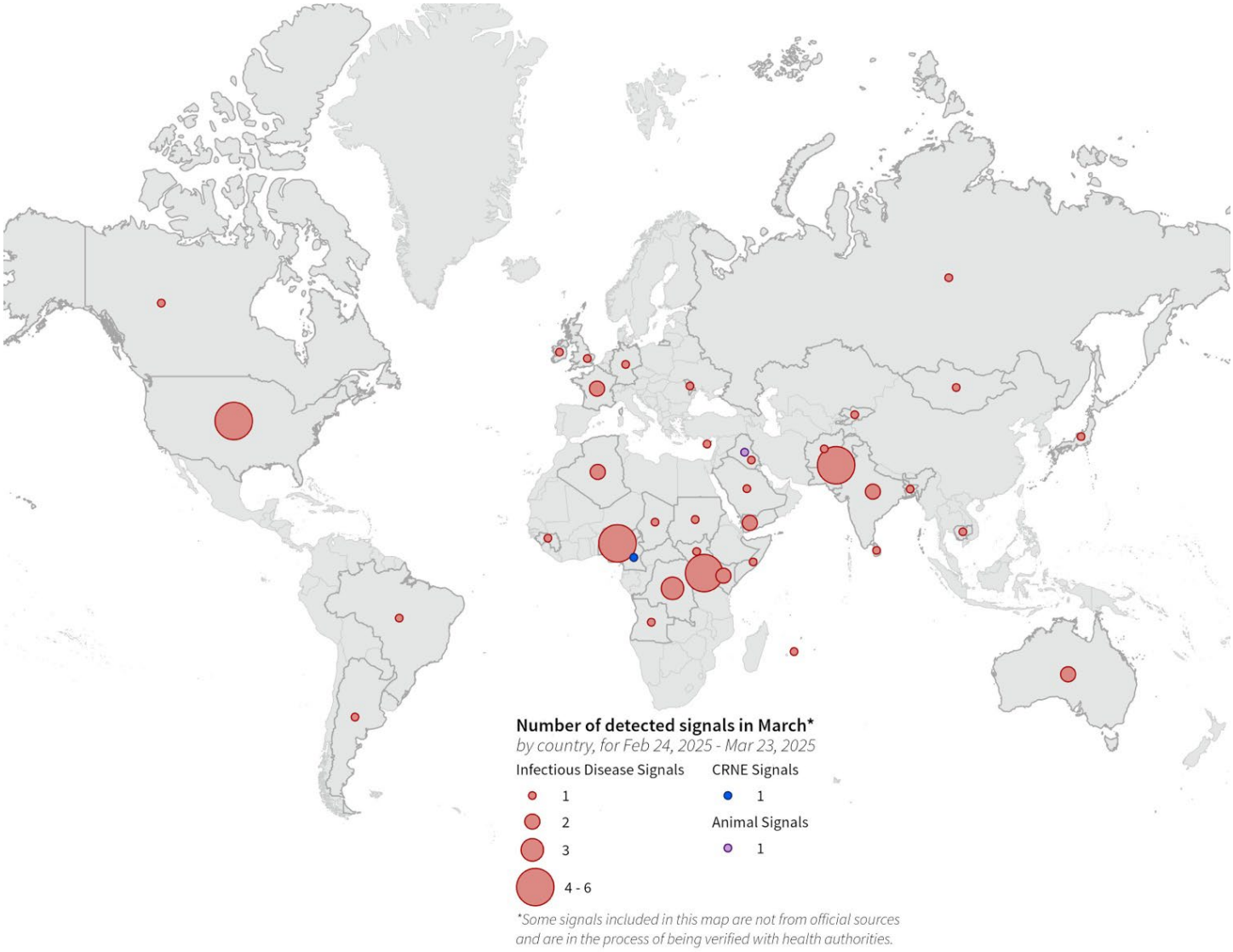

Figure 1: Number of detected signals and potential threats by the Gulf CDC from February 24 to March 23, 2025

Highlights of Signals Identified in March 2025

- **Ebola in Uganda:** A second cluster was identified on 6 March in Uganda's Ebola outbreak [1], linked to the death of a 4-year old boy.
  - Genetic sequencing indicates the new cluster is related to the previous one, suggesting undetected transmission rather than a new introduction from animals.
  - The outbreak has now affected 14 people in 5 districts, with 2 deaths reported.
  - Efforts are underway to identify the outbreak's origin, including retrospective serosurveys and investigations into illness clusters.
  - In response to the ongoing outbreak, the Republic of Korea [2] will bolster quarantine measures on people entering from seven African nations (Uganda, South Sudan, Rwanda, Kenya, the Democratic Republic of the Congo, Tanzania, and Ethiopia) to prevent the spread of the Ebola virus.
    - Inbound travelers from the seven countries will be required to report abnormal bodily symptoms, such as fever and rash, to quarantine officers upon entering Korea.

- **Measles in the United States:** the United States continues to experience measles outbreaks in several states.
- Texas is experiencing the largest outbreak for the last 30 years.
  - The death of an unvaccinated child [3] reported from Lubbock, Texas constitutes the first measles death in Texas in a decade.
  - As of 28 March, a total of 400 cases [4] had been reported since the Texan outbreak began in January, 34 of those cases have been hospitalized.
    - In addition to the ongoing outbreak, Texas has also confirmed one internationally imported case [5] in an infant.
- Pennsylvania [5] has reported its first measles case in 2025 in an unvaccinated resident.
  - The child rode a shuttle bus from John F. Kennedy International Airport in New York City.
  - Health officials are tracing contacts and examining exposures related to the shuttle bus as well as two health facilities.
- As of 7 March, New Mexico [6] had reported 30 cases, in Lea county, a county adjacent to Texas, a steep increase of 20 reported cases since the last reporting date.
  - The death of a resident of New Mexico who tested positive for measles, marks the second measles-related death in the United State
  - Half of the patients in New Mexico are over the age of 18.

- **Measles in Australia:** Australian health authorities confirmed a case of measles in Sydney [7].
  - The case had recently returned from Southeast Asia, where there is an ongoing outbreak of measles in several countries, including Thailand, Vietnam, and Indonesia.

- **Measles in Yemen:** On 9 March, health authorities confirmed that there have been 663 cases of measles in 2025 in the eastern Marib governorate [8], including the death of 10 children.
  - The governorate has dispatched rapid response teams to monitor and investigate cases, as well as health education volunteers, to spread awareness about the disease and the importance of prevention through vaccination.

- **MERS-CoV in Saudi Arabia:** On 13 March, the WHO released its bi-annual update [9] on MERS-CoV.
    - From 6 September 2024 to 28 February 2025, four laboratory-confirmed cases of MERS-CoV infection, including two deaths, were reported to WHO by the Ministry of Health.
    - One of the four cases was a secondary case exposed to the virus in a healthcare facility (nosocomial transmission).
    - There has been no change to the WHO's current risk assessment of the situation.
    - Since the first report of MERS-CoV in Saudi Arabia in 2012, a total 2,618 laboratory-confirmed cases of MERS-CoV infection, with 945 associated deaths (CFR 36%), have been reported to WHO from 27 countries.

- **Nipah virus in Bangladesh:** On 3 March, an official of the Institute of Epidemiology Disease Control and Research (IEDCR [10]) confirmed that at least three people have died in Bangladesh this year after being diagnosed with Nipah virus.
    - The 3 cases appear unrelated, as they were treated in hospitals in 3 different cities (Rajshahi, Barisal and Fardipur).
    - Almost all areas of Bangladesh are vulnerable, and extra precautions are advised in districts with known cases.

Potential Threats

Marburg

Tanzania

This threat was closed by the Gulf CDC on 2 March 2025..

Situational Highlights

- On 13 March, the Ministry of Health of Tanzania and the WHO declared the end of the country's second documented Marburg virus disease (MVD) outbreak.
- **Epidemiological situation:**
  - Overall reported [11] (confirmed and probable): Ten cases (two lab-confirmed and eight probable), including 10 deaths.
    - Case fatality ratio: 100%
    - MVD outbreak declared on: 20 January 2025
  - Last confirmed death: 28 January 2025
- Location: the north-eastern Kagera region, the same region affected as in 2023.
- **Public Health Response:** Following WHO recommendations, the country declared the end [12] of the MVD outbreak after 42 days (two 21-day Marburg virus incubation periods) following the last possible exposure to an MVD probable or confirmed case/death.
- Through active case search and alert management, 281 alerts for MVD were received. All samples were sent for laboratory testing. There were two cases that could be laboratory-confirmed, while the samples tested for the remaining eight were negative.
- A total of 272 contacts that were listed for monitoring completed their 21-day follow-up as of 10 February 2025.

Acute inflammatory demyelinating polyneuropathy (Guillain-Barré Syndrome)

India

This threat was closed by the Gulf CDC on 12 March 2025.

Situational Highlights

- **Epidemiological situation:**
  - As of 9 March 2025, the state of Maharashtra [13] has reported 225 cases of Guillain-Barré Syndrome (GBS), with 197 confirmed cases and 28 suspected cases The outbreak has led to 12 deaths in the state, including 6 confirmed and 6 suspected.
- 179 patients have recovered and been discharged.
- 24 patients remain in intensive care.
- Officials in Pune, noted that while the surge of cases began in January, by the end of February it began to show signs of slowing [14].
- Officials stated that the cases now being admitted to hospitals and health centers are well within what they consider regular limits.
- An article published in *The Lancet* [15] in March 2025 stated that 40 water samples collected in the Pune region had presence of coliform *Escherichia coli*, norovirus, and *Campylobacter jejuni* bacteria.
  - The article highlights the need to improve and maintain water sanitation services, as countries with more robust systems have lower GBS cases linked to bacterial infections.
- **Public health measures:** Pune has continued to conduct environmental surveillance, through collecting water samples [16]. 138 out of a total 7,195 were found to be contaminated. These samples were collected from all over Pune city.
- Officials have been conducting door-to-door surveillance, looking for individuals with symptoms.
  - As of 4 March, over 46,000 homes had been surveyed in the Pune metropolitan city limits.

Events of Regional Interest

Highly Pathogenic Avian Influenza H5N1

Globally

Negligible	Very Low	Low	Moderate	High	Critical

Gulf CDC Risk Assessment of this Event – 6 August 2024

- **Risk Question:** What is the likelihood of HPAI H5N1 human-to-human transmission occurring in the GCC countries and what is the impact of that transmission?
- **Impact:** Moderate. Despite the global unavailability of specific antiviral drugs for HPAI H5N1, case management capacities of the GCC countries for influenza infections are generally high.
- **Likelihood:** Unlikely. The likelihood of HPAI H5N1 importation to the GCC countries from the United States is unlikely given the low number of cases. Further, there is no evidence of human-to-human transmission at this time.

Please refer to the Gulf CDC Rapid Risk Assessment: Highly Pathogenic Avian Influenza H5N1 from 6 August 2024 further details.

Why is this Notable?

The Gulf CDC EI team escalated the Avian Influenza H5N1 outbreaks in the United States to an event of regional interest on 3 August 2024. The Gulf CDC has detected new signals of Highly Pathogenic Avian Influenza H5N1 (HPAI H5N1) infections caused by contact with infected cattle in multiple states within the United States of America.

Key Stats

9 confirmed cases
of HPAI H5N1 in humans globally in 2025

Key Factors of Concern for Avian Influenza H5N1	
Disease severity	Avian Influenza H5N1 with a severe pathogen severity level. The mortality rate for this infection can be as high as 60%. Infection is mainly through contact with infected poultry, however there are growing concerns that this virus could mutate and cause more efficient person-to-person transmission.
Trends from previous outbreaks	In 2023, there were 12 reported human infection cases of H5N1 across 4 countries (Cambodia, China, Chile, United Kingdom). In years prior, there have been small numbers of sporadic reported human infection cases of H5N1 across several countries. In 2024, the HPAI H5N1 outbreak in cattle in the United States caused human infection cases of H5N1 to significantly increase. Additionally, multiple countries reported human infection cases.
Healthcare capacity	All GCC countries have set up infectious disease programs or services for zoonosis, but lack strategic plans or programs needed to control and prevent the spread of avian influenza. For example, there are limited systems in place developed for ensuring regular collaboration and coordination between the Health and Agricultural sectors. This detection delay may lead to the infected individual seeking healthcare at a later stage of the infection, risking further complications and severe symptoms. While recent clades of the H5N1 virus have not been detected in Gulf countries, the connectivity to other countries through agricultural trade and bird migration increases the likelihood of importation of the virus, and the possibility of spillover to humans (particularly those in close contact with poultry). *Please refer to the Gulf CDC Rapid Risk Assessment on Avian Influenza H5N1 (6 August 2024) for further details.* In November 2024, the Gulf CDC and GCC Member states conducted a regional simulation exercise, using H5N1 as the scenario to simulate and test the Public Health Emergencies Response Coordination Plan and identify areas of cooperation, communication channels, and potential gaps.
Connectivity to the Gulf Region	While the United States is highly connected via air travel to the Gulf Region, the low number of cases in humans and the lack of evidence thus far regarding human-to-human transmission makes the likelihood of importation 0%.

Situational Highlights for Avian Influenza H5N1

- **Epidemiological situation in humans:** In 2025, there have been 9 confirmed cases of influenza A(H5N1) in humans. In 2024, there were 80 confirmed cases of influenza A(H5N1).
  - In 2025, cases have been reported in Cambodia (3 cases), the United States (5 cases), and the United Kingdom (1 case).
- **Cambodia:** in March 2025, Cambodia reported two new HPAI H5N1 cases and deaths.
  - On 25 February, the Cambodian Ministry of Health confirmed the country's second human death due to influenza A(H5N1) in 2025. The death came from a child who was exposed to backyard poultry [17] in Prey Veng, Romcheck commune, Preah Sdach district.
    - Investigations have been underway to identify potential additional human cases within the community.
  - On 23 March, the Cambodian Ministry of health confirmed the country's third human infection [18] of influenza A(H5N1) in 2025, in the eastern province of Kratie.
    - The case is a 3.5-year-old child who tested positive on 22 March.
    - Symptoms shown included fever, cough, difficulty breathing and severe fatigue.
    - The source of infection is still being investigated, however the family raised poultry and reported sick and deceased poultry. Testing of the backyard poultry has not been specified.
  - All 3 H5N1 cases in Cambodia have been fatal.
  - **United States:** the U.S. CDC sequenced the viruses from the three human cases from Nevada [19], Wyoming [20] and Ohio [21] . All three were identified from clade 2.3.4.4b (genotype D1.1 for the cases from Nevada and Wyoming, and genotype D1.3. for the case from Ohio).Since April 2024, there have been a total of 70 cases in humans [21] and one associated death.
    - The U.S. CDC's risk assessment update [22] on 28 February 2025 continues to state that the current risk to the general U.S. population is low, while the risk to populations exposed to potentially HPAI H5N1 virus-infected animals is assessed as moderate to high.
  - Additionally, on 19 March, the U.S. CDC completed serology testing [21] on blood specimens from close contacts of a child with mild illness who tested positive for HPAI H5N1 in San Francisco. There were no known animal exposures.
    - While the child had antibodies to HPAI H5N1 virus, none of the tested close contacts had antibodies to the virus. This supports the conclusion that none of the contacts were infected, and that no person-to-person spread had occurred.

Global Influenza A(H5N1) cases in humans in 2025

Country	Cases	Deaths	Clade(s)	Exposure(s)
United States	5	0	2.3.4.4b	Dairy cattle, backyard poultry, unknown (1)
Cambodia	3	3	2.3.2.1c	Backyard poultry
United Kingdom	1	0	2.3.4.4b	Farm birds

- **Epidemiological situation in animals:**
  - The Food and Agriculture Organization of the United Nations (FAO) and the World Organization of Animal Health (WOAH) have drafted a ten-year global strategy [23] for the prevention and control of high pathogenicity avian influenza. This was in response to the global ecological and epidemiological changes and intercontinental spread of H5Nx goose/Guangdong (Gs/GD) lineage HPAI.
    - The updated strategy replaces the 2009 strategy published in response to the initial emergency of the H5N1 Gs/GD lineage in Asia.
    - It emphasizes a systems approach to contextualize the threat of HPAI amidst other global concerns.
  - **Belgium:** In February, Belgian authorities [24] reported the country's first H5 avian influenza detection in two domestic cats on a poultry farm in East Flanders.
    - The cats were euthanized after showing severe symptoms.
    - While this is the first report in cats, other mammals (i.e. foxes, polecats, and domestic ferrets) have previously tested positive for the virus.
  - **India:** 3 regions in India have experienced recent animal outbreaks.
    - The FAO [25] reported 99 cases of HPAI H5N1 in domestic cats, including 18 deaths, in Madhya Pradesh.
    - An outbreak was confirmed among poultry in Jharkhand's Bokaro district [26]. This was following a previous outbreak, about 1 month ago, that led to the culling of 5,500 birds.
    - An outbreak was also confirmed in Patna and Bhagalpur districts [27], resulting in the culling of affected poultry.
      - Follow up investigations are ongoing to confirm any potential infections among humans, particularly those close to poultry farms.
  - **United Kingdom:** the UK government has established an Avian Influenza Vaccination Task Force [28]. This is a joint industry and cross-government initiative focused on exploring poultry vaccination as a preventative measure.
    - The group will consider the veterinary and scientific, legislative and policy, economic (cost benefit) and practical implications of a preventive vaccination policy in poultry.

- It will also identify any trade barriers and the value of exports that might be affected by the implementation of vaccination.

- **United States:** the US Department of Agriculture (USDA) announced a $500 Million Biosecurity Initiative [29] to assist poultry producers in enhancing biosecurity measures, including free assessments and cost-sharing for repairs.
  - The USDA is implementing a five-pronged approach [29] to combat avian flu, encompassing financial relief for affected farms, vaccine and therapeutic research, regulatory streamlining, and consideration of egg imports.
    - It is exploring the use of avian flu vaccines, while carefully addressing potential trade implications and collaborating with stakeholders.
  - In late February, the National Governors Association Center [30] for Best Practices hosted a State and Territorial Leader Advisor Call, where attendees learned more about current H5N1 trends from the Johns Hopkins Center for Outbreak Response and Innovation (CORI), and shared recent collaborative approaches in communicating and mobilizing resources against HPAI H5N1 outbreaks.
  - A feral cat in New Jersey [31] tested positive for Influenza A (strain was not mentioned). It is the first confirmed cat case in the state, and the cat had no reported exposure to infected poultry or livestock, but did roam freely outdoors, so exposure to wild birds or other animals is unknown.
    - Other cats on the property were also reported ill, with an indoor cat testing positive for the virus.
    - Individuals in contact with the cats are asymptomatic but continue to be monitored closely.
    - 4 more cats [32] have tested positive for HPAI H5N1 since the first detection in the state.
  - The USDA APHIS confirmed a new outbreak of H5N1 avian influenza in Idaho dairy cattle [33], the state's first since October 2024.
    - It is still unknown if the finding is linked to a bulk milk detection or from illness symptoms.
    - Also, it's not yet known whether the virus is the B3.13 genotype that has circulated widely in dairy cattle or another jump involving the D1.1 genotype, which has circulated widely in wild birds and over the last several weeks has cropped in dairy cattle in Nevada and Arizona.
  - In March, there were 2 recalls of pet food stemming from concerns of HPAI H5N1 contamination.
    - Wild Coast Raw [34], a pet food company, announced a recall of certain lots of its frozen raw pet food for cats on 1 March. The recall followed severe illness cases linked to H5 avian influenza in Oregon and Washington.

- On 18 March, the New York City Health Department [35] issued an advisory regarding an outbreak in cats, linked to the pet food company Savage Cat Food. Three cases (two confirmed and one suspected) of H5N1 in cats in New York City are associated with the company's poultry packets.

- Poultry farmers are using laser technology [36] to reduce the risk of avian influenza H5N1 by deterring wild birds.
  - The lasers emit a green beam that is visible to birds but mostly invisible to humans during the day, prompting them to avoid poultry farms.
  - Since their implementation, poultry mortality rates have significantly decreased.
  - More than 100 lasers have been installed across affected regions, and lawmakers are considering additional funding to expand their use.

- **Recent findings:**
- A recent study [37] discovered an Influenza A(H5N1) strain resistant to the antiviral drug oseltamivir (Tamiflu) on eight chicken farms in British Columbia, Canada in October 2024.
  - Isolates from the eight farms reveal a mutation in the neuraminidase protein (H275Y) that is rare among clade 2.3.4.4b viruses.
  - NA-H275Y is a known marker of resistance to the neuraminidase inhibitor oseltamivir.
- A new non-peer-reviewed preprint study [38] led by Kansas State University suggests that pigs are moderately susceptible to infection with the bovine-derived H5N1 avian influenza virus but do not transmit it to other pigs.
  - The researchers inoculated piglets with the virus and found low levels of viral replication primarily in the lower respiratory tract, with minimal shedding and no onward transmission to sentinel pigs.
  - While some mutations associated with mammalian adaptation were observed, the study found no evidence of extensive virus adaptation in pigs.
  - The infected pigs showed mild to moderate lung lesions, and most developed neutralizing antibodies. Given the role of pigs as potential "mixing vessels" for influenza viruses, the study emphasizes the need for enhanced surveillance of swine populations to monitor possible reassortment and emergence of new influenza strains with pandemic potential.
- A retrospective study by the U.S. CDC [39] found Influenza A(H5) in Oregon wastewater weeks before its first poultry outbreak and two years before its spread to U.S. cattle.
  - Researchers analyzed 551 samples from 20 sites (September 2021–July 2024) and detected H5N1 clade 2.3.4.4b before its official identification in wild birds (January 2022) and poultry (May 2022).
  - The study found no direct link between wastewater detection and poultry outbreaks or dairy farms.

- According to a news article, scientists are raising concerns about a genetic mutation [40] of the H5N1 avian flu virus found in four dairy cow herds.
    - This mutation, referred to as PB2 E627K, may enhance the risk of transmission between mammals and increase the severity of the disease.
    - The mutation was detected in sequence data that was recently made available by a governmental agricultural department.
- A study published on 17 March titled "large-scale computational modelling of H5 influenza variants against HA1-neutralising antibodies [41]" found a trend of weakening binding affinity of existing antibodies against H5 isolates over time. This indicates that the H5N1 virus is evolving immune escape from therapeutic and immunological defenses.
    - The study also found that based on the variety of host species and locations where H5N1 was observed to have been transmitted from birds to mammals, there is no single central reservoir host species or location associated with H5N1's spread, meaning that the virus has potential to move from epidemic to pandemic status.
- A recently published study assessed the potential cross-protection conferred by existing influenza immunity [42].
    - Researchers serologically evaluated ferrets previously infected with an influenza A(H1N1) pdm09 virus for cross-reactive antibodies. 3 months later, they challenged with either HPAI H5N1 clade 2.3.4.4b or low pathogenicity H7N9 virus.
    - Results demonstrated that prior influenza A(H1N1) pdm09 virus infection more effectively reduced the replication and transmission of the H5N1 virus than did the H7N9 virus.
- Researchers assessed the antiviral susceptibility [43] of H5N1 viruses associated with human infections (clade 2.3.4.4b and clade 2.3.2.1c) between 2023 and 2024. 16 human cases associated with clade 2.3.2.1c and 15 human cases associated with clade 2.3.4.4b H5N1 viruses were identified.
    - When considering known markers associated with reduced susceptibility, two clade 2.3.2.1c viruses possessed mutations associated with reduced M2 blocker susceptibility, whereas no virus contained markers for reduced susceptibility with NA inhibitors (e.g. oseltamivir) or PA inhibitors (e.g. baloxavir). These results were supported by in-vitro assay study.
    - The only clade specific difference noted was a lower inhibition activity of oseltamivir against clade 2.3.4.4b viruses compared to clade 2.3.2.1c viruses.
    - Researchers highlight the importance of monitoring for changes in antiviral susceptibility which may spontaneously emerge as the virus continues to evolve. Novel therapeutics and/or combination therapy require further investigation.

Mpox

Globally

Negligible	Very Low	Low	Moderate	High	Critical

Gulf CDC Risk Assessment of this Event – 14 August 2024

- **Risk Question:** What is the likelihood of importing a mpox clade 1b case into the GCC causing an occurrence of subsequent cases in the GCC in the next 3 months?
- **Impact:** Moderate, With the low transmission potential of the virus in the Gulf communities, and the high national capacities established for mpox prevention and control, the level of potential impact of mpox has been characterized as moderate.
- **Likelihood:** Likely, as there is a large volume of travelers to the Gulf from countries reporting mpox Clade 1b cases, it is likely that unlinked cases/clusters to be detected within the next 3 months.

Why is this Notable?

The Gulf CDC EI team escalated the global mpox to an event of regional interest on 14 August 2024 due to an increase in the expected incidence of epidemic activity. Furthermore, on 14-Aug-2024, the WHO declared mpox as a public health emergency of international concern (PHEIC) for the second time.

Key Stats

4 mpox clade I cases

Linked to travel reported in the GCC region in 2025

Key Factors of Concern for Mpox

Disease severity	Severe complications of mpox may include secondary bacterial infections, pneumonia, sepsis, and encephalitis; immunocompromised individuals are particularly susceptible to severe infections. Mpox is divided into two distinct clades, clade I and clade II, with clade II being further divided into the clade IIa and clade IIb subclades. Clade I is predominantly found in central Africa around the Congo basin while clade IIa is found in West Africa. Clade IIb however, was able to spread and cause outbreaks globally in 2022.

	Clade I has been shown to cause more severe disease than clade II, with case fatality rates (CFRs) of approximately 10% and 1% respectively.
Trends from previous outbreaks	Although ongoing human-to-human transmission of mpox in the DRC has been documented since the 1970s, there are still gaps in knowledge of all the dynamics involved. Initially, infections happened within minor domestic or local clusters, believed to be predominantly caused by the transmission from animals to humans, as sexual transmission of the MPXV clade I was not officially reported until April 2023. Most cases in the multi-country outbreak (non-endemic) in 2022 were clade II, lineage B.1, and its descendants, while the current outbreaks in several countries in Africa (DRC, Uganda, Kenya, Rwanda, Burundi) are primarily clade I.
Healthcare capacity	Within the DRC where cases of mpox clade I are highest, testing in rural areas is limited and just 24% of the clinically compatible (reported as suspected) cases in the country have been tested in 2024. Of those tested, the positivity is approximately 65% at the national level. Surveillance and response capacity have been strengthened within the DRC by government initiatives with the aid of institutions such as the WHO, particularly in the most affected provinces such as South Kivu. Risk communication has also been updated and increased to inform the population about the risks and precautions to take to avoid acquiring Mpox. The Interim Medical Countermeasures Network (i-MCM-Net), that the Gulf CDC participates in, established an access and allocation mechanism for the mpox response. As of 27 September, 2.7 million MBA-BN, 3 million LC16 and 50,000 ACAM2000 vaccines had been pledged by both public and private donors. Countries outside of Africa that have imported mpox clade Ib cases have so far managed to contain cases to households and close contacts.
Connectivity to the Gulf Region	Below are the passenger volumes between the 5 African countries reporting the highest cases of mpox clade I in 2025 to the Gulf region from March 2024 [44]:

	DRC	Uganda	Burundi	Nigeria	Sierra Leone
UAE	2,712	14,625	500	3,812	342
Bahrain	26	82	3	101	3
Saudi Arabia	274	2,066	477	17,922	99
Oman	69	126	52	376	2
Qatar	41	987	23	2,168	26
Kuwait	52	82	7	136	25

Connections between the above-mentioned countries and the region are primarily counted based on airline data. Other routes of entry and illegal migration might contribute to the importation likelihood.

Situational Highlights for Mpox

- **Global classifications of mpox**: On 25 February, the Director-General of the WHO issued a revised set of temporary recommendations [45] following the third meeting of the International Health Regulations (2005) Emergency Committee, which addressed the upsurge of mpox in 2024.
    - The meeting confirmed that the situation still meets the criteria of a Public Health Emergency of International Concern (PHEIC).
    - Updated guidance aimed at strengthening mpox prevention, response, and control efforts globally were issued.
    - The recommendations are intended for countries experiencing the transmission of the mpox virus (MPXV), particularly those with sustained community transmission or clusters of cases.
    - These temporary recommendations complement existing WHO guidelines, which will be extended until 20 August 2025, and are aligned with the WHO's 2024–2027 strategic framework for mpox.
- On 19 March, the UK Health Security Agency (UKHSA [46]) updated that clade Ia and Ib mpox will no longer be classified as a high consequence infectious disease (HCID) following a review by the Advisory Committee on Dangerous Pathogens.
- The review concluded that the evidence no longer fulfills the criteria associated with HCID, such as high mortality rates and absence of available interventions.
- **New and suspected cases of mpox clade I outside Africa:** France, Brazil and Pakistan have confirmed new cases of mpox clade I. Yemen reported a suspected case of mpox that was later confirmed to be negative.
    - **France**: According to France's public health agency (Santé publique France [47]), a second mpox clade Ib case was confirmed in late February.
        - It was imported from an unnamed African country where mpox clade Ib is circulating.
    - **Brazil**: On 7 March, the Ministry of Health [48] confirmed the first case of mpox clade Ib in the state of Sao Paolo. This is the first case of mpox clade I reported in Latin America.
        - The affected individual did not have a recent travel history to locations with current outbreaks of mpox clade I but had received visitors from the Democratic Republic of Congo.
        - Brazilian Health Surveillance Agency officials continue to investigate how transmission occurred.
    - **Pakistan:** On 22 March, health officials in Karachi [49] confirmed the country's first case of mpox. The patient's wife had recently traveled abroad and had initially exhibited symptoms before likely spreading the virus spread to him.

- **Yemen:** The Ministry of Health and Environment [50] of Yemen addressed a social media post by a physician in Al-Qaida City, Ibb Governorate, who reported a suspected case of mpox in a child, although the clade was not specified.
  - The Ministry of Health and Environment launched epidemiological surveillance and dispatched rapid response teams to investigate and assess the case, collecting samples and examining potential contacts.
  - Results confirmed that the child's symptoms did not meet the criteria for mpox, and there was no history of travel or connections to confirmed cases. The Ministry emphasized that Yemen remains free of this disease.

- **Cases in Africa:** According to the Africa CDC [51], as of 12 March, there were a total of 20,835 suspected mpox clade I cases including 5,834 confirmed cases in 2025.

Cumulative number of confirmed mpox cases and death by African country reporting, 2025

Country	Confirmed*	Deaths
Angola	3	0
Burundi	413	0
Central African Republic	6	0
Congo	2	0
Côte d'Ivoire	4	0
DR Congo	2,884	177
Kenya	18	0
Liberia	7	0
Nigeria	79	2
Sierra Leone	38	0
South Africa	3	0
South Sudan	1	0
Rwanda	23	0
Uganda	2,332	23
Zambia	21	0
TOTAL	5,834	202

*Africa CDC defines confirmed cases as laboratory confirmed.

- **South Sudan:** on 24 February, the Ministry of Health [52] confirmed a total of 6 cases of mpox in the country since the outbreak was declared on 7 February 2025.
  - All cases have been reported in Juba
  - The ministry is intensifying its response to curb the outbreak, as it poses a risk of becoming a public health emergency in the country amid an existing cholera outbreak.

- **South Africa:** In March 2025, South African health authorities confirmed a total of 6 mpox clade I cases. This marks the first confirmed cases of mpox in South Africa [53] since September 2024, which by then all belonged to clade II.
  - The first 3 clade I cases were reported in late February Gauteng province [54], one individual having recent travel history to Uganda. The two additional cases were detected through contact tracing.
  - On 20 March [55], 3 additional clade I cases were confirmed in Ekurheuleni, east of Johannesburg. None of these cases had recent travel history to outbreak areas, pointing to local transmission in the country.
- **Zambia:** On 20 March, the Ministry of Health [56] of Zambia confirmed its first mpox-related death, among 31 laboratory-confirmed cases.
  - 7 of the 31 total cases were reported in the last week, which could indicate a larger spread of the outbreak in the country.
- **Uganda:** Uganda continues to report a steady increase [57] in the number of mpox clade Ib cases and deaths in major urban centres.
  - The country now has the second-highest total number of confirmed cases in the region following the Democratic Republic of the Congo (DRC).
  - Since the beginning of 2025, there have been 2,332 laboratory confirmed cases and 23 deaths.

- **Vaccine and treatment information:** according to the WHO Multi-country outbreak of mpox, external situation report [58] published on 10 March, over 800,000 vaccine doses have been delivered to eight countries, and vaccination activities have started in four countries (DRC, Nigeria, Rwanda and Uganda).
- **Uganda's vaccine rollout** [59]**:** Uganda received 10,000 doses of the MVA-BN mpox vaccine from the EU's Health Emergency Preparedness and Response Authority (HERA) in January 2025 as part of the first vaccine consignment.
  - Rollout began in early February 2025. Ring vaccination strategy was used in Kampala city.
  - Authorities are waiting for more vaccines to administer second doses to those already vaccinated. Future rounds of vaccination will cover a larger and more diverse high-risk populations.
  - Uganda is allocated 100,000 more doses. 59,000 doses arrived in mid-March with a second batch of.41,000 doses to follow later.
    - Health workers and commercial sex workers are the next priority groups, as infections remain high among sex workers in low-income areas of Kampala Metropolitan.

Acknowledgements

The production of this monthly epidemic intelligence report was made possible through the collaboration and contributions of multiple individuals and organizations. Thus, the Gulf CDC is grateful to, and would like to acknowledge, all contributing individuals and organizations for their expertise and dedication to epidemic intelligence that were essential to our collective efforts in detecting, monitoring, and preparing for potential public health threats to the GCC region.

The Gulf CDC is grateful for insights on GCC countries' capacities and national data provided by members of the Public Health Emergency Network members. This provided valuable contextual understanding that enhanced the PHE team's assessment of risk posed by the hazards detected.

In addition, the Gulf CDC acknowledges the insights provided by international and GCC subject matter experts on reviewing risk assessment reports and on sharing best practices and lessons learned to improve preparedness for the hazards detected.

For queries regarding this publication, please contact us at eidetect@gulfcdc.org

References

[1] CIDRAP, "Second cluster reported in Uganda's Ebola Sudan outbreak," 6 March 2025. [Online]. Available: https://www.cidrap.umn.edu/ebola/second-cluster-reported-ugandas-ebola-sudan-outbreak.

[2] The Korea Times, "Korea to strengthen quarantine on entries from 7 African nations to prevent Ebola virus," 26 February 2025. [Online]. Available: https://www.koreatimes.co.kr/www/nation/2025/02/113_393062.html.

[3] Associated Press, "A Texas child who was not vaccinated has died of measles, a first for the US in a decade," 26 February 2025. [Online]. Available: https://apnews.com/article/measles-outbreak-west-texas-death-rfk-41adc66641e4a56ce2b2677480031ab9.

[4] Texas Health and Human Services, "Measles Outbreak – March 28, 2025," 28 March 2025. [Online]. Available: https://www.dshs.texas.gov/news-alerts/measles-outbreak-2025.

[5] CIDRAP, "Measles cases reported in Philadelphia area and in Texas traveler," 3 March 2025. [Online]. Available: https://www.cidrap.umn.edu/measles/measles-cases-reported-philadelphia-area-and-texas-traveler.

[6] Daily Post, "Measles cases rise to 30 in New Mexico," 7 March 2025. [Online]. Available: https://dailypost.ng/2025/03/07/measles-cases-rise-to-30-in-new-mexico/.

[7] 9 News, "Health warnings as confirmed measles case visits popular Sydney spots," 22 February 2025. [Online]. Available: https://www.9news.com.au/national/health-warnings-as-confirmed-measles-case-visits-popular-sydney-spots/babcf0f8-7588-4417-8444-349819334111.

[8] Almashhad, "10 children die and 663 are infected with measles in Marib, Yemen," 9 March 2025. [Online]. Available: https://almashhad.com/article/638944300664525-health/237603001171067-%D9%88%D9%81%D8%A7%D8%A9-10-%D8%A3%D8%B7%D9%81%D8%A7%D9%84-%D9%88%D8%A5%D8%B5%D8%A7%D8%A8%D8%A9-663-%D8%A8%D9%85%D8%B1%D8%B6-%D8%A7%D9%84%D8%AD%D8%B5%D8%A8%D8%A9-%D9%81%D9%8A-%D9%85%D8%A.

[9] World Health Organization, "Middle East respiratory syndrome coronavirus - Kingdom of Saudi Arabia," 13 March 2025. [Online]. Available: https://www.who.int/emergencies/disease-outbreak-news/item/2025-DON560.

[10] The Business Standard, "3 die from Nipah virus this year," 3 March 2025. [Online]. Available: https://www.tbsnews.net/bangladesh/health/3-die-nipah-virus-year-1083631.

[11] World Health Organization, "Tanzania declares end of Marburg virus disease outbreak," 13 March 2025. [Online]. Available: https://www.afro.who.int/countries/united-republic-of-tanzania/news/tanzania-declares-end-marburg-virus-disease-outbreak.

[12] World Health Organization, "Disease Outbreak News | Marburg virus disease– United Republic of Tanzania," 13 March 2025. [Online]. Available: https://www.who.int/emergencies/disease-outbreak-news/item/2025-DON559.

[13] Hindustan Times, "Maharashtra reports 12 Guillain-Barre Syndrome deaths, 225 cases," 9 March 2025. [Online]. Available: https://www.hindustantimes.com/india-news/maharashtra-reports-12-guillain-barre-syndrome-deaths-225-cases-101741463664039.html.

[14] The Times of India, "Officials say Pune Guillain-Barré Syndrome surge is 'definitely slowing'; city adds only one case," 25 February 2025. [Online]. Available: https://timesofindia.indiatimes.com/city/pune/officials-say-pune-guillain-barr-syndrome-surge-is-definitely-slowing-city-adds-only-one-case/articleshow/118539875.cms.

[15] S. S. e. a. Banerjee, "Guillain–Barré syndrome outbreak in Pune: a health emergency," *The Lancet,* vol. 405, no. 10484, pp. 1050-1051, 2025.

[16] The Times of India, "Pune records zero Guillain-Barré syndrome cases for second consecutive day," 4 March 2025. [Online]. Available: https://timesofindia.indiatimes.com/city/pune/pune-records-zero-guillain-barr-syndrome-cases-for-second-consecutive-day/articleshow/118691505.cms.

[17] Outbreak News Today, "H5N1 avian influenza fatality in Cambodia," 25 February 2025. [Online]. Available: https://outbreaknewstoday.substack.com/p/h5n1-avian-influenza-fatality-in.

[18] CIDRAP, "Cambodia reports third fatal human H5N1 case of the year," 24 March 2025. [Online]. Available: https://www.cidrap.umn.edu/avian-influenza-bird-flu/cambodia-reports-third-fatal-human-h5n1-case-year.

[19] Central Nevada Health District, "Press Release," 10 February 2025. [Online]. Available: https://www.centralnevadahd.org/press-release/.

[20] United States Centers for Disease Control and Prevention, "CDC A(H5N1) Bird Flu Response Update February 26, 2025," 26 February 2025. [Online]. Available: https://www.cdc.gov/bird-flu/spotlights/h5n1-response-02262025.html.

[21] United States Centers for Disease Control and Prevention, "CDC A(H5N1) Bird Flu Response Update March 19, 2025," [Online]. Available: https://www.cdc.gov/bird-flu/spotlights/h5n1-response-03192025.html. [Accessed 19].

[22] United States Centers for Disease Control and Prevention, "Risk to People in the United States from Highly Pathogenic Avian Influenza A(H5N1) Viruses," 28 February 2025. [Online]. Available: https://www.cdc.gov/cfa-qualitative-assessments/php/data-research/h5-risk-assessment.html.

[23] World Organisation for Animal Health, "Global Strategy for the Prevention and Control of High Pathogenicity Avian Influenza (2024–2033)," 19 February 2025. [Online]. Available: https://www.woah.org/en/document/global-strategy-for-the-prevention-and-control-of-high-pathogenicity-avian-influenza-2024-2033/.

[24] CIDRAP, "Avian flu detected in Belgian cats as outbreaks continue on US poultry, dairy farms," 10 March 2025. [Online]. Available: https://www.cidrap.umn.edu/avian-influenza-bird-flu/avian-flu-detected-belgian-cats-outbreaks-continue-us-poultry-dairy-farms.

[25] Food and Agriculture Organization of the United Nations, "Disease event details," 20 February 2025. [Online]. Available: https://empres-i.apps.fao.org/event-report/400049.

[26] The Hindu, "After Jharkhand's Ranchi, bird flu outbreak reported in Bokaro," 9 March 2025. [Online]. Available: https://www.thehindu.com/news/national/jharkhand/after-jharkhands-ranchi-bird-flu-outbreak-reported-in-bokaro/article69309333.ece.

[27] Down To Earth, "Bird flu spreads in Bihar," 10 March 2025. [Online]. Available: https://www.downtoearth.org.in/health/bird-flu-spreads-in-bihar.

[28] Government of the United Kingdom, "Bird flu (avian influenza) vaccination task force," [Online]. Available: https://www.gov.uk/government/groups/bird-flu-avian-influenza-vaccination-task-force#governance.

[29] CIDRAP, "USDA rolls out 5-step plan to battle avian flu in poultry," 26 February 2025. [Online]. Available: https://www.cidrap.umn.edu/avian-influenza-bird-flu/usda-rolls-out-5-step-plan-battle-avian-flu-poultry.

[30] National Governors Association, "H5N1 Avian Flu Emergency Preparedness and Response," 10 March 2024. [Online]. Available: https://www.nga.org/news/commentary/h5n1-avian-flu-emergency-preparedness-and-response/.

[31] ABC 7 NY News, "Cat infected with bird flu in New Jersey euthanized after developing severe symptoms," 28 February 2025. [Online]. Available: https://abc7ny.com/post/nj-bird-flu-first-cat-case-new-jersey-confirmed-hunterdon-county/15963845/.

[32] Avian Flu Diary, "New Jersey: Hunterdon County DOH Reports 4 More Cats Test Positive for HPAI H5N1 (Ttl=6)," 8 March 2025. [Online]. Available: https://afludiary.blogspot.com/2025/03/new-jersey-hunterdon-county-doh-reports.html.

[33] US Department of Agriculture | Animal and Plant Health Inspection Service, "HPAI Confirmed Cases in Livestock," 4 March 2025. [Online]. Available: https://www.aphis.usda.gov/livestock-poultry-disease/avian/avian-influenza/hpai-detections/hpai-confirmed-cases-livestock.

[34] CIDRAP, "H5N1 findings prompt another raw pet food recall," 3 March 2025. [Online]. Available: https://www.cidrap.umn.edu/avian-influenza-bird-flu/h5n1-findings-prompt-another-raw-pet-food-recall.

[35] Harlem World Magazine, "Bird Flu Found In Two NYC Cats Linked To Savage Cat Food Raw Pet Products," 17 March 2025. [Online]. Available: https://www.harlemworldmagazine.com/bird-flu-found-in-two-nyc-cats-linked-to-savage-cat-food-raw-pet-products/.

[36] CBS News, "Bird lasers embraced by Minnesota farmers to keep flocks healthy amid H5N1 outbreak," 28 February 2025. [Online]. Available: https://www.cbsnews.com/minnesota/news/minnesota-farm-bird-flu-laser/.

[37] A. V. J. T. R. C. E. C. N. G. A. T. N. R. S. …. B. Y. Signore, "Neuraminidase reassortment and oseltamivir resistance in clade 2.3.4.4b A(H5N1) viruses circulating among Canadian poultry, 2024," *Emerging Microbes & Infections,*, vol. 14, no. 1, 2025.

[38] CIDRAP, "Cow-derived avian flu can infect pigs but doesn't spread among them, preprint suggests," 6 March 2025. [Online]. Available: https://www.cidrap.umn.edu/avian-influenza-bird-flu/cow-derived-avian-flu-can-infect-pigs-doesnt-spread-among-them-preprint.

[39] United States Centers for Disease Control and Prevention, "Avian Influenza A(H5) Subtype in Wastewater — Oregon, September 15, 2021–July 11, 2024," 27 February 2025. [Online]. Available: https://www.cdc.gov/mmwr/volumes/74/wr/mm7406a5.htm#contribAff.

[40] English News Xinhua, "H5N1 mutation detected in U.S. dairy herds prompts caution on pandemic potential," 13 March 2025. [Online]. Available: https://english.news.cn/20250313/4a0f59ab81834b469964c2674ae55e0c/c.html.

[41] C. T. e. a. Ford, "Large-scale computational modelling of H5 influenza variants against HA1-neutralising antibodies," *eBiomedicine | The Lancet,* vol. 114, 2025.

[42] B. J. L. Z. e. a. Sun X, "Effect of Prior Influenza A(H1N1)pdm09 Virus Infection on Pathogenesis and Transmission of Human Influenza A(H5N1) Clade 2.3.4.4b Virus in Ferret Model," *Emerging Infectious Diseases,* vol. 31, no. 3, 2025.

[43] C. A. N. H. e. a. Pascua PQ, "Antiviral Susceptibility of Influenza A(H5N1) Clade 2.3.2.1c and 2.3.4.4b Viruses from Humans, 2023–2024.," *Emerging Infectious Diseases,* vol. 31, no. 4, 2025.

[44] BlueDot Inc., "Historical Air Travel Volumes," March 2025. [Online]. Available: bluedot.global.

[45] World Health Organization, " Third meeting of the International Health Regulations (2005) Emergency Committee regarding the upsurge of mpox 2024 – Temporary recommendations," 27 February 2025. [Online]. Available: https://www.who.int/news/item/27-02-2025-third-meeting-of-the-international-health-regulations-2005-emmergency-committee-regarding-the-upsurge-of-mpox-2024-temporary-recommendations.

[46] UK Health Security Agency, "Latet update on Clade Ib mpox," 19 March 2025. [Online]. Available: https://www.gov.uk/government/news/ukhsa-detects-first-case-of-clade-ib-mpox.

[47] Santé publique France, "Cas de Mpox en France. 1er janvier - 4 mars 2025.," 5 March 2025. [Online]. Available: https://www.santepubliquefrance.fr/maladies-et-traumatismes/maladies-transmissibles-de-l-animal-a-l-homme/mpox/documents/bulletin-national/cas-de-mpox-en-france.-1er-janvier-4-mars-2025.

[48] Economia UOL, "SP confirma 1° caso do clado Ib do vírus Mpox no Estado… - Veja mais em https://economia.uol.com.br/noticias/reuters/2025/03/07/sp-confirma-1-caso-do-clado-ib-do-virus-mpox-no-estado.htm?cmpid=copiaecola," 7 March 2025. [Online]. Available: https://economia.uol.com.br/noticias/reuters/2025/03/07/sp-confirma-1-caso-do-clado-ib-do-virus-mpox-no-estado.htm.

[49] Daily Pakistan, "Sindh reports first confirmed case of monkeypox in Karachi," 22 March 2025. [Online]. Available: https://en.dailypakistan.com.pk/22-Mar-2025/sindh-reports-first-confirmed-case-of-monkeypox-in-karachi.

[50] Al-Marsad News, "A clarification of what was rumored about the discovery of the first case of monkeypox in Ibb Governorate," 20 February 2025. [Online]. Available: https://almrsadnews.net/ar/?p=50693.

[51] Africa Centres for Disease Control and Prevention, "Africa CDC Epidemic Intelligence Weekly Report, March 2025," 12 March 2025. [Online]. Available: https://africacdc.org/download/africa-cdc-epidemic-intelligence-weekly-report-march-2025/.

[52] Eye Radio, "South Sudan confirmes 6 Mpox cases," 24 February 2025. [Online]. Available: https://www.eyeradio.org/south-sudan-confirms-6-mpox-cases/.

[53] South Africa National Institute for Communicable Diseases, "Mpox Updates," 24 March 2025. [Online]. Available: https://www.nicd.ac.za/mpox-updates/.

[54] The Hans India, "South Africa reports three new cases of mponkeypox," 1 March 2025. [Online]. Available: https://www.thehansindia.com/news/international/south-africa-reports-three-new-cases-of-monkeypox-949913.

[55] Eyewitness News, "Health Dept urges vigilance after 3 new mpox cases confirmed in Ekurhuleni," 20 March 2025. [Online]. Available: https://www.ewn.co.za/2025/03/20/health-dept-urges-vigilance-after-3-new-mpox-cases-confirmed-in-ekurhuleni.

[56] Big News Network, "Zambia confirms first mpox death as infections rises to 31," 31 March 2025. [Online]. Available: https://www.bignewsnetwork.com/news/278115362/zambia-confirms-first-mpox-death-as-infections-rises-to-31.

[57] Outbreak News Today, "Africa: Mpox in Uganda, Namibia's 1st cholera case in a decade and CCHF outbreak in Uganda and more," 15 March 2025. [Online]. Available: https://outbreaknewstoday.substack.com/p/africa-mpox-in-uganda-namibias-1st.

[58] World Health Organization, "Multi-country outbreak of mpox, External situation report #48 - 10 March 2025," 10 March 2025. [Online]. Available: https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report--48---10-march-2025.

[59] GAVI, "Mpox vaccines are beginning to roll out in Uganda," 14 March 2025. [Online]. Available: https://www.gavi.org/vaccineswork/mpox-vaccines-are-beginning-roll-out-uganda-and-sex-workers-are-front-queue#:~:text=vaccines%20roll%20out-,On%2021%20January%202025%2C%20Uganda%20received%20a%20consignment%20of%2010%2C000,administered%20to%20female%20sex.