



Monthly Epidemic Intelligence Report

Issue 09

September 2024



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 **September 2024** (August 24, 2024 – September 23, 2024).*

101

Disease
Signals

5

CRNE
Signals

2

Events of Regional
Interest

1

Mass Gathering
Event

Executive Summary

Disease Signals This month, the epidemic intelligence team at Gulf CDC detected 101 infectious disease signals. Of these, 13% were of West Nile Virus, 32% were of mpox, and 7% were of Crimean-Congo hemorrhagic fever. 2% of signals came from GCC countries, notably a report of a MERS-CoV case in a 54-year-old man in Saudi Arabia, he tested positive early September and was discharged mid-September.

CRNE Signals 5 CRNE signals with potential public health consequences were identified, including 1 related to flooding in Yemen and an environmental signal related to the spread of dengue in Saudi Arabia.

Events of Regional Interest the Gulf CDC continued to monitor 2 potential threats in September: Avian Influenza globally and Mpox globally.

Mass Gathering the Gulf CDC continued to monitor signals in relation to the 2024 Olympics and Paralympics hosted in July and August in France.

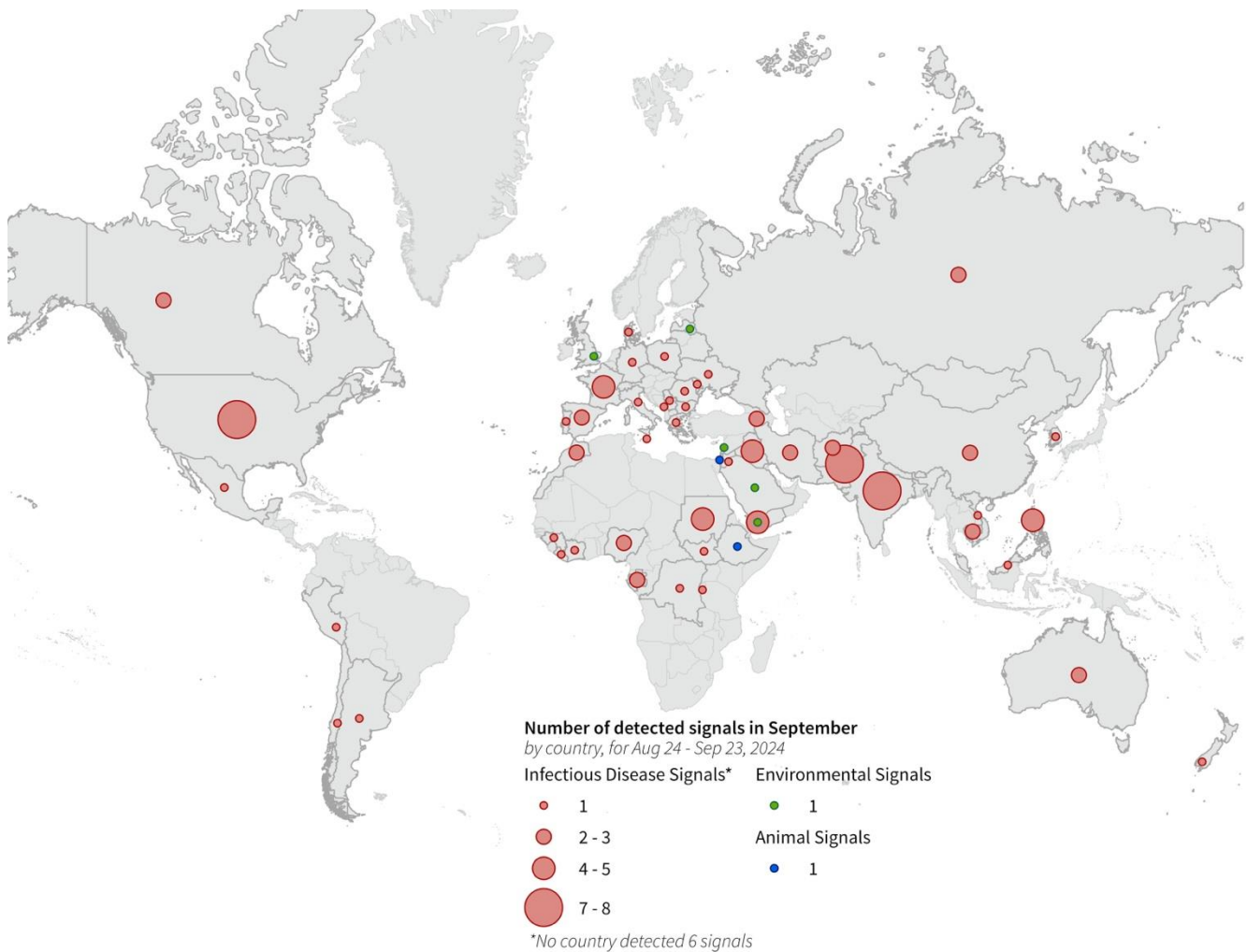
* Monthly reports cover data from the 24th of the previous month to the 23rd of the reported month, ensuring there is no gap in reported data.

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.



● Number of detected signals and potential threats by the Gulf CDC from August 24 to September 23, 2024

*Some signals included in this map are not from official sources and are in the process of being verified with health authorities

Highlights of Signals Identified in September 2024

Multiple diseases in Yemen: ongoing disease outbreaks (cholera, dengue, measles and diphtheria) in [Yemen have been further exacerbated](#)¹ recently by heavy flooding, which has led to the destruction of water, sanitation, and health infrastructure.

- The cholera outbreak, escalated since March 2024, has seen over 163,000 suspected cases nationwide, with the northern regions recording 132,049 suspected cases and 493 deaths.¹
 - The [Ma'rib governorate](#)² has reported a total of 54,000 suspected cases of cholera
- The Ma'rib and [Taiz Governorates](#)³ have reported 451 suspected cases of dengue fever and 1,898 suspected cases of dengue fever in 2024, respectively.
- The Ma'rib and Taiz governorates have reported 434 cases of measles and 1,171 suspected cases of measles in 2024, respectively.
- Finally, the Ma'rib governorate has also reported 151 cases of diphtheria in 2024.

Undiagnosed Illness in South Sudan: the Ministry of Health of South Sudan has launched an investigation following the '[mysterious death](#)' of at least 19 people reported⁴ to have occurred in 2 counties in Northern Bahr El Ghazal state. Media reports stated they all suffered of severe gastrointestinal symptoms before losing consciousness. The main suspected cause is food poisoning, and there has been no proof of relation between the two clusters experiencing similar symptoms. Samples from cases in both areas were sent to the regional reference laboratory in Kampala, Uganda for testing, and preliminary results were negative for several infectious agents.⁴

SARS-CoV-2 in Germany: [a new COVID variant, called XEC](#)⁵, was first detected in Germany in August and appears to have a growth advantage over other circulating variants, but is not a radically different variant. It is known as a 'recombinant variant' between KS.1.1 and KP.3.3, which both evolved from the JN.1 variant, the dominant variant globally at the start of 2024.

- Thus far, over 600 cases of the XEC variant have been identified in 27 countries across Europe, North America, and Asia.
- As of 18 September, the countries with the highest number of identified XEC cases are⁵:
 - United States – 118
 - Germany – 92
 - United Kingdom – 82
 - Canada – 77
 - Denmark – 61
- Of note, cases of XEC may also be high in other countries that do not routinely sequence COVID samples.

Dengue in Iran: [dengue fever cases in Iran](#)⁶ are rising. In 2024, there have been 178 dengue fever cases in the country, most of which had reported a history of travel to United Arab Emirates (131), Pakistan (7), Oman (1) and Benin (1). The imported cases were detected mostly in the Fars province, southwestern part of Iran, close to the Persian Gulf.

Events of Regional Interest

Highly Pathogenic Avian Influenza H5N1

Globally

Negligible	Very Low	Low	Moderate	High	Critical
Gulf CDC Risk Assessment of this Event					
<ul style="list-style-type: none"> • 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. <p><i>Please refer to the Gulf CDC Rapid Risk Assessment: Highly Pathogenic Avian Influenza H5N1 from 6 August 2024 further details.</i></p>					



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

14 Cases
 of HPAI H5N1 in Humans in the US in 2024

27 Cases
 of HPAI H5N1 in Humans Globally in 2024



Key Factors of Concern for Avian Influenza H5N1



Disease severity

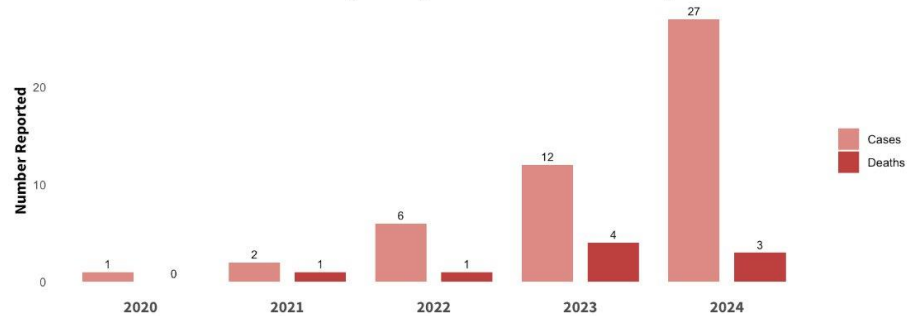
Avian Influenza H5N1 with a severe pathogen severity level. The mortality rate for this infection can be as high as 60%. Infection is mainly through contact with infected poultry, however there are growing concerns that this virus could mutate and cause more efficient person-to-person transmission.



Trends from previous outbreaks

In 2023, there were [12 reported human infection cases of H5N1](#)⁷ 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.

Global Number of HPAI A(H5N1) Cases and Deaths by Year



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.



Connectivity to the Gulf Region

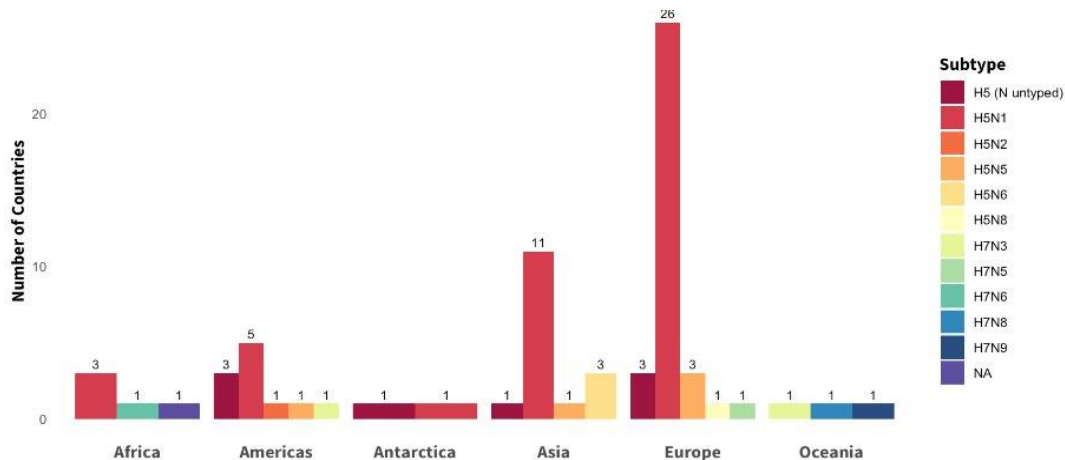
While the United States is highly connected via air travel to the Gulf Region, the low number of cases in humans and the lack of evidence thus far regarding human-to-human transmission makes the likelihood of importation 0%.



Situational Highlights for Avian Influenza H5N1

- Since the start of 2024, there have been 27 human cases of HPAI H5N1 reported across 5 countries.
 - 14 of them in the United States, 10 in Cambodia, and 1 case each in Australia, Vietnam, and China⁸.
 - On 6 September 2024, Missouri confirmed [the first case of HPAI H5N1](#),⁹ bringing the total number of cases reported in the United States to 14 since 1 April 2024.
 - Of note, this case has [no known animal exposure](#).¹⁰ 3 contacts to the patient also had no known animal exposure, they developed mild respiratory symptoms and recovered but were not tested.
 - According to the [US CDC](#)¹¹, the simultaneous development of symptoms does not support person-to-person spread but suggests a common exposure.
 - From August 24, 2024, to September 23, 2024, no new human cases of HPAI H5N1 were reported in Cambodia, with the [total number of human cases remaining at 10](#).¹²
- Since the start of 2024, 46 countries have reported new or ongoing outbreaks of HPAI H5N1 in affected herds.
 - As of 19-Sep-2024, HPAI (H5N1) has been reported in 14 states with over 208 affected livestock herds.¹³ Five states continue to report detections in the last 30 days. Since the onset of the HPAI A(H5N1) outbreak in livestock, four states have been substantially affected: Colorado, Idaho, Michigan, and Texas.
 - Between 13-16 September 2024, Germany, Czech Republic, and India reported new outbreaks of HPAI H5N1.¹⁴¹⁵¹⁶
 - As per WOAH-World Animal Health Information System (WAHIS), HPAI events were reported in 71 countries globally between 1 January 2024 and 19 September 2024.¹⁷ The chart below outlines the number of countries reporting HPAI events per continent. Most of the events were dominated by HPAI H5N1 and were reported as recurrence of eradicated disease.

Figure 1: Number of Countries Reporting HPAI Subtypes by Region
(Including poultry and non-poultry species from 1 January to 19 September 2024)



- **Recent findings:**

- Researchers assessed the outcome of recent vaccination of domestic ducks in France starting October 2023 on HPAI H5 outbreaks in the 2023-2024 season. Predictive modeling based on previous outbreak data suggested a 95.9% reduction in the observed number of outbreaks with vaccination compared to the expected level without vaccination.¹⁸
- Weekly wastewater sampling by the Texas Epidemic Public Health Institute (with UTHealth Houston and Baylor College of Medicine) detected H5N1 in samples collected between 04-Mar to 15-Jul-2024 (10 cities in Texas, 100 out of 399 samples). The researchers noted that the protocol can be used to detect genetic changes that might indicate an adaptation of the virus to mammals and changes in the currently detected virus does not suggest these human adaptations.¹⁹
- Researchers detected and characterized the spread of highly pathogenic avian influenza (HPAI) virus H5N1 clade 2.3.4.4b in the Antarctic (South Georgia) and sub-Antarctic regions (Falkland Islands) in late 2023 for the first time. Findings indicated that the virus (B3.2 genotype) likely spread from South America (Argentina) through migratory birds via two independent introductions. Sequences from mammal species did not contain key adaptive mutations.²⁰



Mpox

Globally

Negligible	Very Low	Low	Moderate	High	Critical
Gulf CDC Risk Assessment of this Event					
<ul style="list-style-type: none"> • 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, and have developed a rapid risk assessment to the member states. Thereafter, On 14-Aug-2024, the World Health Organization (WHO) declared mpox as a public health emergency of international concern (PHEIC) for the second time.



Key Stats

3 Clade 1b exported cases
 Outside the African continent

27,000+
 Reported suspected cases in African countries in 2024



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 in affected countries

In 2024, the majority (96%) of mpox cases have been reported from the DRC and Burundi. The current outbreak in the DRC (started in 2023) is due to mpox clade I with at least one new strain of clade I, proposed as clade Ib, and around 70% of cases reported in children under 15. However, within the DRC, 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.²¹ Surveillance and 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. Further clinical trials against Mpox have also begun and the LC-16 and MVA-BN vaccines have been approved for emergency use.²² In the last meeting of the Standing Committee on Health Emergency Prevention, Preparedness, and Response, they emphasized the challenges being faced currently, such as defining roles and responsibilities of stakeholders, major funding needs, high vaccine costs, low global vaccine supply, national vaccine regulatory approvals, and knowledge gaps.



Connectivity to the Gulf Region

Of the 6 African countries reporting cases of mpox Clade 1b, the GCC has the highest connectivity with Kenya. To get an estimated of volume of travelers for August 2024, the following passenger volumes were recorded between African countries reporting cases of mpox Clade 1b, during September 2024, historical passenger volumes including both direct and indirect passengers for September 2023 are presented below:

	Burundi	DRC	Kenya	Rwanda	Uganda
UAE	471	2,156	12,870	2,653	14,229
Bahrain	1	16	286	8	76
Saudi Arabia	148	290	3,910	127	1,231
Oman	50	85	566	91	179
Qatar	51	46	3,110	341	1,419
Kuwait	12	97	335	19	168

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

- **New countries reporting mpox cases in 2024:** 2 countries in Africa (Guinea and Gabon) reported their first-ever laboratory-confirmed cases of mpox, and India reported the first known imported case of mpox Clade 1b.
 - The [case in Guinea](#)²³ occurred in Macenta, near the south-eastern border of Guinea, 24 km away from the Liberian border where cases continue to be reported.
 - The sample was returned positive on 2 September 2024, with no additional genomic information specified.
 - Existing response protocols have been reactivated including screening and isolation systems for rapid detection and response, while a preparedness and response framework plan for mpox is being further developed.
 - Gabon’s surveillance had been on high alert since the declaration of the mpox epidemic in DRC in April 2024 and had tested a total of 6 suspected cases, with this being the first confirmed (3 September 2024).
 - The [confirmed case in Gabon](#)²⁴ had recently returned from 2 weeks in Uganda.
 - The Gabonese Ministry of Health, with support from international partners, has developed a preparedness and response plan for a potential mpox epidemic, enhancing epidemiological surveillance, establishing diagnostic capacity and activating a multisectoral coordination mechanism.
 - On 23 September, India’s Ministry of Health confirmed the [first known imported case of mpox Clade 1b](#)²⁵, the third reported imported detection of Clade I outside Africa (this follows the cases reported in Sweden and Thailand that each reported one case in August).
 - India also reported cases of mpox clade II in September 2024

- The mpox clade I case was reported in an individual from Kerala, with [a travel history to the UAE](#)²⁶.
 - Both India and the UAE are within the top 10 countries with high connectivity with the DRC in September 2024. It is unknown how long the patient stayed in the UAE and if the disease was acquired there. The UAE has not reported any cases of Clade Ib.
- **Vaccination updates:**
 - On 21 September, [Africa CDC and the Pandemic Fund](#)²⁷ announced the Pandemic Fund's decision to fast-track US\$128.89 million to 10 African countries (DRC, Burundi, Rwanda, Uganda, Kenya, Sudan, Djibouti, Ethiopia, Somalia and South Sudan) affected by mpox, demonstrating the global community's commitment to addressing the ongoing outbreak.
 - The funding will bolster national and regional capacities in areas including disease surveillance, laboratory diagnostics and networks, and workforce development.
 - On 18 September, the governments of [Japan and DRC signed an agreement](#)²⁸ for Japan to donate Lc16 Mpox vaccines
 - On 22 September, during the third meeting of the [Committee of Heads of state and Government](#)²⁹ of the Africa CDC, the significant strides in mobilizing resources to combat the mpox outbreak was highlighted.
 - 4.3 million doses of vaccine have been secured, out of a target of 10 million
 - \$314 million in financial commitments have been made towards the \$599 million goal, with additional pledges expected in late September from key partners.
 - An [mRNA vaccine for Mpox](#) is under development by Moderna, which has demonstrated greater effectiveness than the current vaccine in reducing disease symptoms and duration.³⁰
 - Recent analysis from the Centers for Disease Control and Prevention reveals that Tecovirimat (Tpoxx) was prescribed to more than 7,100 US mpox patients mainly for treating rash and pain, with severe outcomes observed primarily in individuals with weakened immune systems. [The study](#)³¹ emphasizes the need for further controlled clinical trials to assess the safety and effectiveness of tecovirimat in treating monkeypox. The authors cautioned that tecovirimat safety and effectiveness can't be determined from the data.
 - **Cumulative cases:** According to the [Africa CDC](#)³², as of 16 September 2024, there have been 27,975 suspected human cases, 6,210 confirmed human cases, and 738 human deaths of mpox in Africa in 2024.

Cumulative cases (2024) by African country reporting mpox cases

Country	Suspected	Confirmed	Deaths
Burundi*	1,497	365	0
Cameroon	5	5	3
Central African Republic	47	47	1
Congo	184	21	0
Côte d'Ivoire	275	52	1
Democratic Republic of the Congo*	23,319	5,467	730
Gabon	15	2	0
Guinea	24	1	0
Kenya*	115	5	0
Liberia	96	11	0
Morocco	1	1	0
Nigeria	990	55	0
Rwanda*	2	2	0
South Africa	25	25	3
Uganda*	11	11	0

*Country has confirmed at least one case of mpox clade Ib.

MPXV clades detected in Africa

from 1 Jan 2022, as of 22 Sep 2024

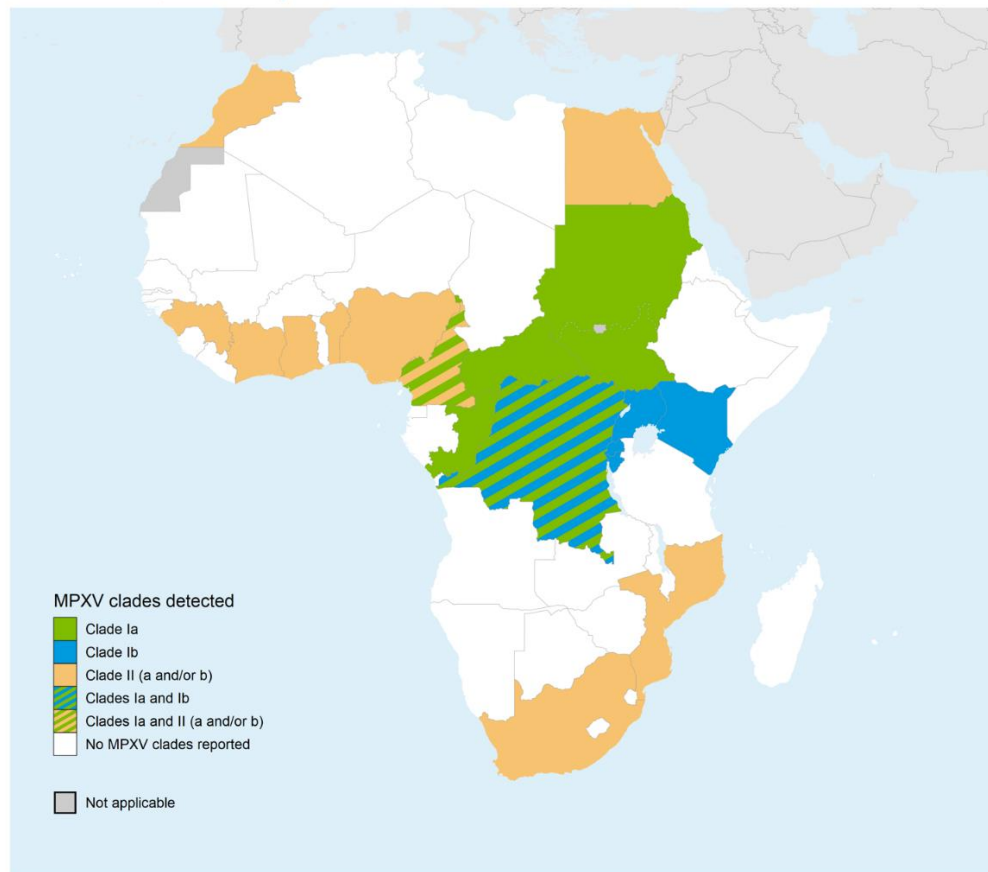


Figure 2: MPXV clades detected in Africa (1 Jan 2022 to 22 Sept 2024), WHO³³



Mass Gathering Monitoring

2024 Olympic and Paralympic Games

 Globally

 Key Stats

21 signals

Detected during the Olympic and Paralympic Games

12 Hazards

Reported across the detected signals

Situational Highlights for 2024 Olympic and Paralympic Mass Gathering Monitoring

- Daily reports containing Olympic and Paralympic signals were exchanged with partners, while weekly reports are distributed to GCC countries.
- The monitoring of the Olympics started on 24 July 2024 and ended on 24 August 2024. The monitoring of the Paralympics started on 28 August 2024 and ended on 13 September 2024.
- Since the start of the monitoring process the Gulf CDC has detected 21 signals from France, none of which pose a threat to the GCC countries.
- 12 different health hazards were reported across the 21 signals identified. While a majority of the signals were detected between 24 July 2024 and 23 August 2024, five additional signals were detected between 24 August 2024 and 23 September 2024.
 - France continues to experience an unprecedented rise in Whooping Cough (Pertussis) cases in 2024, with circulation of the bacteria (*Bordetella pertussis*) intensifying over the course of the Olympic Games. As of September 16th, 2024, [Public Health France has reported that 134,639 pertussis cases](#) in 2024.³⁴ A total of 35 deaths have been provisionally reported since the beginning of 2024, including 22 children and 13 adults.
 - The [first autochthonous cases of Chikungunya virus](#) in over ten years were reported in the Saint-Gilles-les-Bains region of Reunion Island. As of 29 August 2024, three cases have been reported.³⁵
 - [Two new cases of West Nile virus](#) were detected in Var department, southeastern France. This brings the total number of cases in the region to five.³⁶ In total, [France has had 11 indigenous cases of West Nile virus](#) since the beginning of 2024: one case in Guadeloupe in early August and 10 cases in the Var since mid-July.³⁷
 - On 11 September 2024, [five suspected cases of botulism poisoning](#) were reported by the French Government.³⁸ According to the authorities, a locally made brand of wild garlic sauce may have been contaminated with the toxin.

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

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Connectivity data is collected via the BlueDot Data Portal, in September 2024.