

# Monthly Epidemic Intelligence Report

Issue 19

July 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.

## 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 **July 2025** (June 24 – July 23, 2025). \*

**41**  
Disease  
Signals

**0**  
Potential  
Threats

**2**  
Events of  
Regional Interest

## Executive Summary

**Disease Signals:** This month, the epidemic intelligence team at Gulf CDC detected 41 infectious disease signals. Of these, 14.5% were influenza A H5N1 virus, 12.2% were Crimean-Congo haemorrhagic fever (CCHF), and 9.7% were undiagnosed illnesses.

No infectious disease signals were detected in GCC countries this month. There were 10 disease signals detected in the neighboring countries of Iraq (three CCHF signals), Sudan (two cholera signals and one dengue signal), Yemen (one dengue signal), Somalia (one diphtheria signal), Palestine (one unspecified meningitis signal), and Jordan (one unspecified rotavirus signal).

**Events of Regional Interest:** The Gulf CDC continued to monitor two events of regional interest in July: highly pathogenic avian influenza (H5N1) globally and mpox globally.

\* Monthly reports cover data from the 24<sup>th</sup> of the previous month to the 23<sup>rd</sup> 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.

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 24 June to 23 July 2025.**

Please note that the size of dots noting detected signals corresponds to the number of signals in the country, not the cumulative number of detected signals globally.

## Highlights of Signals Identified in July 2025

- **Cholera in Sudan:** Sudan has reported a widespread cholera outbreak affecting 13 states, with over 80,000 cases and 2,000 deaths reported to date in 2025. In June, 21,563 cases and 388 deaths have been reported in Khartoum, 166 cases and 13 deaths in South Darfur, and 13 cases and one death in West Darfur (1).
- **Crimean-Congo haemorrhagic fever (CCHF) in Iraq:** As of July 21, 2025, Iraq has confirmed 231 cases and 30 deaths due to the CCHF outbreak in 2025. Dhi Qar province has recorded the highest number of cases, namely 84, and 4 deaths. Baghdad follows with 38 cases and 6 deaths. The outbreak in 2023 was the most severe in recent years, with over 587 cases and 83 deaths reported, primarily affecting southern regions (2,3).
- **Dengue in Yemen:** In April 2025, Yemen recorded over 3,900 cases of dengue and 14 deaths. In response to the rising number of cases, the WHO, in collaboration with the King Salman Humanitarian Aid and Relief Centre (KSRelief), has launched a comprehensive dengue control campaign in Aden and Lahj, aiming to reduce mosquito breeding sites, raise awareness, and curb disease transmission (4).
- **Poliovirus (WPV1) in Pakistan:** The Regional Reference Laboratory for Polio Eradication at the National Institute of Health (NIH), Islamabad, has confirmed a wild polio case from South Khyber Pakhtunkhwa. A 19-month-old boy has been confirmed as the eighth polio case from Khyber Pakhtunkhwa this year. The total number of polio cases in Pakistan in 2025 has reached 14 (eight from Khyber Pakhtunkhwa, four from Sindh, and one each from Punjab and Gilgit-Baltistan) (5,6).
- **SARS-CoV-2 in Brazil:** A new COVID-19 variant, XFG, recently added as a "variant under monitoring" by WHO, is spreading in Rio de Janeiro. The virus was found in 46 out of 74 samples (62%) analyzed by Fiocruz in collaboration with the city's health department, based on cases diagnosed between July 1 and 8, 2025 (7).
- **West Nile in Italy:** On 16 July 2025, media reported the first locally acquired cases of West Nile virus in the Lazio region of central Italy, with the two cases appearing unrelated (8).
- **Whooping cough due to *Bordetella pertussis* in Japan:** Japan is experiencing a significant surge in pertussis cases in 2025. As of June 15, 2025, there have been 31,966 confirmed cases, compared to 4,096 cases reported for 2024 (9).

# 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					
<ul style="list-style-type: none"> <li><b>Risk Question:</b> What is the likelihood of Highly Pathogenic Avian Influenza (HPAI) H5N1 human-to-human transmission occurring in the GCC countries and what is the impact of that transmission?</li> <li><b>Impact:</b> 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.</li> <li><b>Likelihood:</b> Unlikely. The likelihood of HPAI H5N1 importation to the GCC countries from the United States (US) is unlikely given the low number of cases. Further, there is no evidence of human-to-human transmission at this time.</li> </ul> <p>Please refer to the <a href="#">Gulf CDC Rapid Risk Assessment: Highly Pathogenic Avian Influenza H5N1</a> for further details (Authorized access only).</p>					



### Why is this Notable?

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







### Key Stats

**25 confirmed cases**  
of HPAI H5N1 in humans globally in 2025



### Key Factors of Concern for HPAI 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 human-to-human transmission.
 Trends from previous outbreaks	<p>In 2023, there were 12 reported human cases of HPAI H5N1 across 4 countries (Cambodia, China, Chile, the United Kingdom). In years prior, there have been small numbers of sporadic human cases of H5N1 infection reported across several countries.</p> <p>In 2024, the HPAI H5N1 outbreak in cattle in the US caused human infection cases of H5N1 to significantly increase. Additionally, multiple other countries reported cases of human infections.</p>

 <b>Healthcare capacity</b>	<p>All GCC countries have set up infectious disease programs or services for zoonoses, 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. The resulting detection delay may lead the infected individual seeking healthcare at a later stage of infection, risking further complications and more severe symptoms. While recently circulating 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). <i>Please refer to the Gulf CDC Rapid Risk Assessment on Avian Influenza H5N1 (6 August 2024) for further details.</i></p> <p>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.</p>
 <b>Connectivity to the Gulf Region</b>	<p>While the US is highly connected via air travel to the Gulf Region, the low number of cases in humans and the current lack of evidence for human-to-human transmission makes the importation through humans unlikely.</p>



## Situational Highlights for HPAI H5N1

### Epidemiological situation in humans:

- Since the last update, 7 confirmed cases of HPAI H5N1 have been reported in humans (as of 23 July), raising the total number in 2025 to 25 confirmed cases. In 2024, there were 80 confirmed cases of HPAI H5N1.

**Table 1.** Confirmed cases of HPAI H5N1 infections in humans in 2025, globally (as of 23 July 2025)

Country	Cases	Deaths	Clade(s)	Exposure(s)
Cambodia	13	6	2.3.2.1e*	Backyard poultry, suspected infected birds
United States	5	0	2.3.4.4b	Dairy cattle, backyard poultry, and unknown
Bangladesh	3	0	2.3.2.1a	Under investigation
United Kingdom	1	0	2.3.4.4b	Farm birds
Mexico	1	1	2.3.4.4b	Under investigation
India	1	1	2.3.2.1a	Suspected raw poultry meat
Vietnam	1	0	2.3.2.1c	Suspected backyard poultry
China	1	0	Not specified	Domestic poultry

\*The clade of the latest two cases reported in July hasn't been published yet.

- **United States:** Starting July 7, 2025, the US CDC merged their avian influenza A(H5N1) virus updates with their routine influenza data updates. Therefore, the number of people monitored and tested for the virus will be only reported monthly, and animal infections will not be reported on their website (10).
  - Media reports indicate that the CDC has ended its emergency response for the virus due to a decline in animal infections and no reports of human cases since February



2025. The emergency response was deactivated on July 2, with the understanding that surveillance and response for avian influenza cases will continue under the purview of its influenza division. No official statements from the CDC have been issued yet (10).

- **Cambodia:** Between 24 June and 21 July, Cambodia's Ministry of Health confirmed 6 new human cases of HPAI H5N1, bringing the total number of confirmed cases in 2025 to 13, with 6 deaths. Investigation revealed that all new cases had direct contact with sick or dead poultry. Genomic analysis revealed that all reported cases in June belonged to clade 2.3.2.1e, formerly classified as 2.3.2.1c, combining segments from clades 2.3.2.1c and 2.3.4.4b; while the clade of cases reported in July hasn't been published yet (11–16).
  - Four cases were reported from Siem Reap province, one from Kampot province and one from Tbong Khmum province. Cases reported in three females aged between 35 and 46 years old, and three boys aged 5, 6 and 16 years old. Their symptoms included: high fever, cough, diarrhea, vomiting, fatigue, and shortness of breath.
- **Bangladesh:** In WHO report "Influenza at the human-animal interface", published July 1, 2025, Bangladesh reported one confirmed case of avian influenza A(H5N1) occurring in late May, marking the third human case in 2025.
  - A child from the Chittagong Division had prior backyard poultry exposure. He was hospitalized with diarrhea, fever, and mild respiratory symptoms on 21 May. The case was confirmed positive on 28 May, and the WHO was notified on 31 May. The patient has since recovered; no additional cases were detected among close contacts (17).
- **Epidemiological situation in animals:**
  - **United States:** On June 23, 2025, the US Department of Agriculture (USDA) Food Safety and Inspection Service reissued Notice 26-24, extending the Influenza A(H5N1) dairy cow testing program until September 30, 2025 (18). Additionally, media reports indicate that the USDA is considering a plan to vaccinate poultry against avian influenza for the first time, which involves assessing the impact of vaccination on exports (19).
  - **South Africa:** Media reports that South Africa has imposed imports ban on poultry from 27 US poultry-producing. However, the South African government has recently allowed the US to self-manage poultry import restrictions, causing alarm among local producers over potential exposure to HPAI (20).
  - **United Kingdom:** Wales has confirmed its first cases of HPAI H5N1 since April 2023, with two separate outbreaks identified. The first outbreak was identified on 23 June 2025 at a smallholding with 120 hens in Pembrokeshire. The second outbreak was reported at a commercial game bird facility in Wrexham the following day. Protection and surveillance zones are in place around each of the infected premises (21,22).
  - **India:** On 13 July 2025, media reports indicate that the government of Odisha, India, confirmed a poultry outbreak of avian influenza H5N1 in Bada Ankula village.
    - The National Institute of High Security Animal Diseases (NIHSAD) in Bhopal confirmed the outbreak. Over 6,700 birds were culled within a 1-kilometre radius of the affected area. Additional containment measures include disinfection, closure of poultry shops within a 10-kilometre radius, restriction on poultry movement, and door-to-door health surveillance. Rapid response teams have been deployed, and arrangements have been made for the safe disposal of carcasses and compensation to affected farmers (23).
  - **South Korea:** On July 7, 2025, a report was published detailing the first detection of the clade 2.3.4.4b HPAI H5N1 virus in—a leopard cat (*Prionailurus bengalensis*)—in South Korea. This finding highlights the occurrence of H5N1 in a mammalian species for the first time in South Korea and raises concerns about cross-species transmission and spillover risks. The report underscores the importance of enhanced wildlife surveillance and monitoring to better understand the virus's evolving host range and implications for public and animal health (24).



- According to the **ECDC avian influenza surveillance report (March - June 2025)**, HPAI A(H5N1) and A(H5N5) virus detections were reported in the following mammals: a domestic cat, red foxes, Eurasian otters, and grey seals in Finland, Germany, Netherlands, Norway, Poland, and United Kingdom. HPAI A(H5N1) viral infection was detected in a sheep in the United Kingdom for the first time. Outside Europe, the US continued to report A(H5N1) virus detections in dairy cattle. The virus was found for the first time in a gray fox, and a long-tailed weasel (25).

- **Recent findings:**

- **WHO** conducted a virtual scientific expert consultation on A(H5) vaccines and vaccination in September 2024. The consultation report, published on 23 June 2025, provides an overview of the landscape of A(H5) vaccines and summarizes options for Member States' potential use of A(H5) vaccination during the interpandemic and emergence periods (26).
- **United States:** Sequenced HPAI H5N1 virus samples from a house fly collected in California in October 2024 have recently been uploaded to GISAID. These samples belong to the B3.12 subtype of the 2.3.4.4b clade (27). Scientists noted that the detection of avian influenza in house flies indicates that these insects might mechanically transport the virus around farms. (28).
- **Brazil:** Brazil's National Health Surveillance Agency (Anvisa) has authorized human clinical trials for the country's first avian influenza vaccine, starting July 3, 2025. The Phase I and II trials will evaluate the safety and efficacy of two formulations in nearly 700 adult volunteers, aged 18 to over 60. The Butantan Institute aims to complete monitoring by 2026 but may expedite the timeline in case of an epidemic (29).
- **A study** provided insights into **H5N1 virus transmission and control in cattle**. The study revealed how the influenza A(H5N1) virus invades dairy cattle mammary glands, potentially leading to widespread outbreaks in the US. Their study, published in National Science Review, shows the virus binds to oral tissues and transmits to the mammary glands during sucking, highlighting the importance of vaccination (30).
- **A study involving ferrets** infected with HPAI H5N1 subclade 2.3.4.4 b, isolated from a European grey seal in 2023, revealed that an intratracheal infection with this strain is more virulent than an intratracheal infection with an older strain (A/Indonesia/05/2005). The ferrets infected with the grey seal strain experienced faster mortality, severe pneumonia, and irreversible hypothermia, along with significant virus replication and harmful changes in their respiratory and other organs. These results underscore the importance of using updated ferret models based on current circulating virus strains (31).
- **A preprint article** describing a **genomic sequencing analysis of the re-emerging HPAI H5N1 virus detected in Argentina** in February 2025 revealed novel triple-reassortant viruses containing gene segments from Eurasian H5N1 and low-pathogenic viruses from South and North American lineages. These findings underscore the continued evolution and diversification of clade 2.3.4.4b H5N1 in the Americas (32).
- Researchers from the Institute of Molecular Genetics in the Czech Republic and Ludwig Maximilian University in Munich, Germany have identified **two key regulatory genes of avian immunity**, IRF3 and IRF9, previously thought to be absent in bird genomes. This finding alters the understanding of avian immunity evolution and could improve viral infection protection for livestock and humans. The study shows that IRF9 is essential for antiviral defense, as experiments with duck cells demonstrated its necessity for producing antiviral genes. Genomic analysis revealed IRF3 exists only in certain bird groups like ostriches, while IRF9 is common but absent in chickens and pheasants, suggesting potential evolutionary loss (33).

# Mpox

## Globally

Negligible	Very Low	Low	Moderate	High	Critical
Gulf CDC Risk Assessment of this Event – 2024					
<ul style="list-style-type: none"> <li><b>Risk Question:</b> What is the likelihood of importing a mpox clade Ib case into the GCC causing an occurrence of subsequent cases in the GCC in the next 3 months?</li> <li><b>Impact:</b> 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.</li> <li><b>Likelihood:</b> Likely, as there is a large volume of travelers to the Gulf from countries reporting mpox clade Ib cases, it is likely that unlinked cases/clusters to be detected within the next 3 months.</li> </ul> <p>Please refer to the <a href="#">Gulf CDC Rapid Risk Assessment: Mpox</a> for further details (authorized access only).</p>					



### 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. The same date, WHO declared mpox as a public health emergency of international concern (PHEIC) for the second time. On 5 June 2025, the WHO Director-General announced the upsurge in cases continued to meet the criteria of a PHEIC.



### Key Stats

**8 mpox clade I cases\***

Linked to travel reported in the GCC region in 2025

\*No mpox cases in GCC countries in the last 6 weeks (34)



### 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 viruses (MPXV) can be 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 transmission dynamics involved. Initially, infections happened within minor domestic or local clusters, which were believed to be predominantly caused by animals to human-transmission. 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 due to an infection with a clade II, lineage B.1, virus or its descendants, while the current outbreaks in several countries in Africa (DRC, Uganda, Kenya, Rwanda, Burundi) are primarily caused by MPXV clade I.



### Healthcare capacity

Within the DRC where cases of MPXV 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, 2024, 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 number of mpox clade I cases in 2025, and the Gulf region since July 2024 (35):

	DRC	Uganda	Sierra Leone	Burundi	Liberia
UAE	3359	14757	326	380	120
Bahrain	34	89	2	3	-
Saudi Arabia	371	1503	50	82	4
Oman	98	133	23	51	-
Qatar	167	1218	38	26	17
Kuwait	69	138	15	8	1

*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

- **WHO** has published "**Strategic framework for enhancing prevention and control of mpox (2024–2027)**" which outlines a road map for health authorities, communities, and stakeholders worldwide to control mpox outbreaks in every context, advance mpox research and access to countermeasures, and minimize zoonotic transmission (36).
- **New and suspected cases of mpox clade I outside Africa:**
  - **China:** According to WHO's "Multi-country outbreak of mpox, External situation report #55 - 11 July 2025" published on 11 July 2025, China has reported 9 cases of mpox clade Ib, bringing the cumulative number of mpox clade Ib cases detected in China to 23.
    - Four of the nine cases are linked to a previously identified family cluster, including two asymptomatic children and two adults with past exposure and evidence of prior infection. Four additional cases involve individuals with recent international travel history, and one case is a sexual contact. One case was identified in a person without recent travel, but with contact with a symptomatic individual not previously confirmed as a case (34,37).
  - **United Kingdom:** According to WHO, on 19 June 2025, the United Kingdom confirmed two cases of mpox clade Ib. One case was reported in an adult male with a recent travel history to the United Arab Emirates, and the other case was a contact of this traveler. This brings the cumulative number of reported cases of mpox clade Ib in the United Kingdom to 14 cases (34,38).

- **Cases in Africa:** According to the Africa CDC, as of 21 July, there were a total of 82,270 suspected cases, of which 27,284 have been laboratory confirmed, and 539 deaths (in suspected cases) in 24 African countries in 2025 (39).

**Table 2.** Cumulative number of confirmed mpox cases and deaths reported by African countries, 2025 (39)

Country	Confirmed cases*	Deaths among confirmed cases
Angola	4	0
Burundi	1,206	0
Cameroon	1	0
Central African Republic	16	0
Congo	57	1
Côte d'Ivoire	23	0
Democratic Republic of Congo	13,529	538
Ethiopia	26	1
Ghana	195	0
Guinea	206	0
Kenya	209	4
Liberia	272	0
Malawi	50	0
Morocco	2	0
Mozambique	4	0
Nigeria	236	4
Rwanda	40	0
Sierra Leone	4,731	35
South Africa	6	0
South Sudan	17	0
Tanzania	93	0
Togo	48	0
Uganda	6,159	37
Zambia	152	3

\*Africa CDC defines confirmed cases as laboratory confirmed.

- **Mozambique:** On July 16, Mozambique confirmed four new mpox cases in the Lago district of Niassa province. Three of which were linked to travel from Malawi, indicating cross-border transmission. Health authorities are investigating 20 additional suspected cases, spread across Niassa and Tete provinces (40,41).
- **South Africa:** Media reports that two new mpox cases have been confirmed in Gauteng, the Western Cape provinces with no recent travel to countries with high case reports, indicating possible local transmission. The total number of confirmed mpox cases in the country has reached 10 in 2025, with cases gradually increasing, including three in the Western Cape. Authorities are ramping up containment efforts in response (42,43).
- **Recent Findings**
  - In a recent in-vitro study, researchers discovered that mpox virus can spread efficiently in brain organoids, leading to neuronal cell death. Their findings highlighted a previously unexplored aspect of mpox infections: They analyzed the susceptibility of neural tissue to mpox using human neural organoids (hNO) exposed to a clade IIb isolate. They reported susceptibility of several cell types to the virus, including neural progenitor cells and neurons. (44).
  - A preprint article evaluated both humoral and cellular immune responses elicited by an MVA-BN booster administered at least 2 years after the primary vaccination course. Results demonstrated that an MVA-BN booster administered two years after the primary vaccination series effectively restores and enhances both humoral and cellular immunity in individuals at ongoing risk for mpox. A significant increase was observed in IgG titres against both circulating MPXV clades, suggesting potential cross-clade protection, alongside marked improvements in neutralising antibody levels and T-cell responses (45).
  - NanoViricides, Inc., a company developing broad-spectrum antivirals, announced its progress on NV-387 for mpox treatment as WHO extends the public health emergency status. NV-387 aims to address this issue by advances to Phase II clinical trials (46,47).

# 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](mailto:eidetect@gulfcdc.org)

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