GCDC
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 20

August 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 **August 2025** (July 24 – August 23, 2025). *

45 Signals	1 Mass Gathering Event	2 Events of Regional Interest

Executive Summary

Disease Signals: This month, the Epidemic Intelligence team at Gulf CDC detected a total of 45 signals. Of these, 39 were related to infectious diseases, 3 to food contamination, 1 to an environmental hazard, and 2 were categorized as 'other (meaning public health implications but no clear hazards)'. Among the infectious disease signals, 13.3% were associated with chikungunya, 13.3% with poliovirus (including WPV1 and unspecified types), and 8.9% with West Nile virus.

This month, 3 signals were detected within GCC countries: 1 MERS-CoV signal in Saudi Arabia, and 2 food poisoning incidents reported in both Saudi Arabia and Kuwait. In neighboring countries, 11 signals were identified: Iraq (heat exhaustion and measles), Palestine (acute flaccid myelitis and unspecified poliovirus), Sudan (adverse event following immunization and cholera), Yemen (cholera and measles), Somalia (diphtheria), Syrian Arab Republic (food poisoning), and Israel (measles).

Mass Gathering Event: The Gulf CDC monitored one mass gathering event: Arbaeen 2025, during the period 03-24 August 2025. A total of six signals were detected across two countries during this monitoring period.

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 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.

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 July to 23 August 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 August 2025

- **Adverse event following immunization (AEFI) in Sudan:** On 6 August 2025, three children in Khartoum, Sudan, died following measles vaccination, prompting an official investigation by the Ministry of Health. Two children died within an hour of receiving the vaccine, and a third died nine days later. Initial assessments suggested a possible allergic reaction or human error. The investigation revealed improper storage practices, with vaccine vials stored alongside other medicines, breaching cold chain protocols (1).
- **Cholera in Sudan:** As of August 2025, over 3,500 suspected cholera cases and 149 associated deaths have been reported across Darfur since the outbreak began in June. Major clusters have been identified in North and South Darfur, with the disease now spreading to Jebel Marra and Qolo. Isolation centers have been activated in affected areas (2).
- **Cholera in Yemen:** Between 1 January and 14 July 2025, Yemen reported 38,120 suspected cholera cases and 105 deaths in Houthi-controlled regions. The governorates most affected include Hajjah, Sana'a (Amanat Al-Asimah), Amran, and Al-Hudaydah (3).
- **Crimean-Congo Haemorrhagic Fever in Iraq:** As of 30 July 2025, Iraq's Ministry of Health confirmed 240 cases of CCHF and 31 related deaths (4).
- **MERS-CoV in Saudi Arabia:** Saudi Arabia reported one new case of Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in August. This brings the country's total for 2025 to 11 confirmed cases, including two deaths (5).
- **Poliovirus (WPV1) in Pakistan:** Pakistan reported a surge in wild poliovirus type 1 (WPV1) cases in August 2025. As of mid-August, the country had recorded 21 cases in total: 13 in Khyber Pakhtunkhwa, 6 in Sindh, and 1 each in Punjab and Baltistan. Recent confirmations include cases in a 6-month-old girl from Rahim Yar Khan and a 10-month-old boy from South Khyber Pakhtunkhwa. Several of the affected children were unvaccinated (6–9).
- **Poliovirus (Unspecified) in Palestine:** On 22 July 2025, the Gaza Ministry of Health reported a rise in acute flaccid paralysis (AFP) cases, with 45 identified between May and July. Although the specific poliovirus type has not been confirmed, the risk of circulating vaccine-derived poliovirus type 2 (cVDPV2) has been classified as very high by WHO, following a resurgence of cases after 25 years of polio-free status (10,11).

Mass Gathering Monitoring

Arbaeen Pilgrimage

Globally

Negligible	Very Low	Low	Moderate	High	Critical

Gulf CDC Risk Assessment of this Event – 03 August 2025

- **Risk Question:** What is the risk of infectious disease transmission occurring in the GCC in the next 3 months as a result of the 2025 Arbaeen, based on the diseases with the highest chance of importation or exportation during and after Arbaeen?
- **Likelihood Impact:** Very low to moderate, depending on the disease.
  - Moderate: Meningococcal disease and Crimean-Congo hemorrhagic fever (CCHF),
  - Low: COVID-19, malaria, typhoid, dengue, cholera, measles, influenza, and hepatitis A
  - Very low: Chikungunya

Please refer to the Gulf CDC Rapid Risk Assessment: 'Mass Gathering Risk Assessment: Arbaeen 1447H (2025) in Iraq (Public Health Implications to GCC)' for further details (Authorized access only).

Why is this Notable?

Arbaeen is a mass gathering that has a high possibility of spreading infectious diseases and requiring public health monitoring. The risk of infectious disease transmission during Arbaeen may extend to the local population, other GCC countries, and the home population of returning pilgrims after Arbaeen. There are several public health risks increased in mass gatherings such as Arbaeen, including the risk of transmission of respiratory diseases, food and water-borne diseases, heat-related illnesses, and meningococcal diseases.

Key Stats

6 signals

Detected during Arbaeen Mass Gathering Monitoring from 2 countries

Key Factors of Concern for Arbaeen Mass Gathering Monitoring

Trends from previous mass gatherings

There have been some documented public health emergencies that previously occurred during the Arbaeen, most notably:

Cholera: Due to the widespread provision of food and water by unregulated sources and limited hygiene monitoring, cases of foodborne illness and suspected cholera outbreaks have been reported during previous Arbaeen events.

Heat-related illnesses and injuries: Many pilgrims travel long distances on foot in harsh conditions, often resulting in heat exhaustion, dehydration, and crowd-related injuries.

Situational Highlights for Hajj Mass Gathering Monitoring

- The Arbaeen mass gathering monitoring took place between 3 August and 21 August 2025.
- **Priority countries:** For the Arbaeen, the Gulf CDC focused on mass gathering monitoring of 5 priority countries. These 6 countries were based on the highest number of visas permits granted to nationals of India, Iran, Iraq, Lebanon, Pakistan, and Yemen.
- **Priority hazards:** The Gulf CDC focused on three potential hazard categories to monitor during the Arbaeen pilgrimage.
    - Infectious diseases with a risk of immediate transmission (i.e. COVID-19, measles, etc.)
    - Infectious diseases that can have high consequences but are typically reported sporadically (i.e. MERS, mpox, anthrax, meningococcal disease, avian influenza, Crimean-Congo hemorrhagic fever, Ebola, botulism, Kyasanur forest disease, Marburg virus disease)
    - Infectious diseases that do not present as an immediate transmission risk during the Arbaeen but have a risk of long-term establishment in the GCC countries due to the presence of a competent vector (i.e., Chikungunya, malaria, yellow fever, Zika, dengue), as well as the potential of introducing or importing a new vector to the GCC region.

- **Signals:** A total of 6 signals from 2 countries were identified in Arbaeen Mass Gathering Monitoring
    - All the signals were detected in Iraq and Iran (one of the priority countries).
- **Priority hazards identified:** While no specific outbreak or confirmed public health hazard has been detected, several signals of interest were detected during the monitoring period. These included reports of respiratory illnesses, potentially linked to COVID-19, influenza, or other viral pathogens, as well as gastroenteritis cases. Additional signals were related to heat exhaustion, environmental factors, and crowd-related incidents, which are commonly observed during large-scale mass gatherings.

The Gulf CDC is continuing to monitor priority hazards following the Arabaeen given incubation periods of priority hazards, delays in event-based and indicator-based reporting and return to the GCC countries by pilgrims following completion of the Arbaeen pilgrimage.

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 Highly Pathogenic Avian Influenza (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 (US) 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 for further details (Authorized access only).

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

26 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	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. 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.
Healthcare capacity	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). 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 H5N1as 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 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.

Situational Highlights for HPAI H5N1

Epidemiological situation in humans:

- Since the last update, 2 new confirmed cases of HPAI H5N1 have been reported in humans (as of 23 August), raising the total number in 2025 to 27 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 August 2025)

Country	Cases	Deaths	Clade(s)	Exposure(s)
Cambodia	15	7	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.*

- **Cambodia:** Between 29 July and 11 August 2025, Cambodia's Ministry of Health confirmed three additional human cases of avian influenza A(H5N1), raising the total number of cases in 2025 to 16, including 6 fatalities. All three cases presented with respiratory symptoms, and exposure to infected poultry remains the most likely source of infection. Genetic characterization of these recent cases has not yet been published (12–15).
  - The newly reported cases include a 26-year-old man from Siem Reap province with a history of direct poultry contact through slaughtering.

- A 6-year-old girl from Prey Mok village, Takeo province, hospitalized with severe respiratory symptoms; and a third case involving a girl under the age of 10, also from Takeo province.

- **Epidemiological situation in animals:**
  - **United States:** On August 15, 2025, the U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) confirmed the detection of highly pathogenic avian influenza A(H5N1) at a live-bird market in Los Angeles County, California (16).
    - Approximately 1,400 birds were involved in the outbreak. This marks the first poultry-related H5N1 detection in the United States since early July and the first in California since mid-February, although sporadic detections continue in the state's dairy cattle. The USDA continues to monitor avian and livestock populations for further spread.
  - **India:** As of 24 July 2025, India has reported 41 outbreaks of highly pathogenic avian influenza A(H5N1) in domestic poultry across 10 states, according to the Press Information Bureau (17).
    - While infections remain primarily limited to birds, authorities have also documented sporadic detections in non-avian mammalian species, including tigers, lions, leopards, jungle cats, and domestic cats, raising concerns about possible cross-species transmission and continued viral circulation in the environment.
  - **Spain:** On 11 August 2025, Spain reported an outbreak of highly pathogenic avian influenza A(H5N1) at a fattening turkey farm in the southwestern region of Extremadura, according to the World Organisation for Animal Health (WOAH) (18).
    - In response to the outbreak, China's General Administration of Customs and the Ministry of Agriculture and Rural Affairs announced a ban on the direct and indirect import of poultry and related products from Spain.
- **Recent findings:**
  - A recent **study** tested a whole-virus H5N1 vaccine in cynomolgus macaques and found that it gave strong, long-term protection. The vaccine, given once, was able to prevent

serious lung illness caused by H5N1 even five years later. This suggests that whole-virus vaccines could be useful for long-lasting protection against bird flu in humans (19).

- One **study** looked at H5N1 viruses taken from infected cows and birds to see if they could spread to people. The cow viruses caused severe illness in mice and ferrets and were able to grow in human lung cells. They spread through direct contact but not through the air. The good news is that they still respond to approved treatments and vaccines. The risk to people who haven't been in contact with sick animals is considered low, but experts say it's important to keep watching these viruses in case they change (20).

Mpox

Globally

Negligible	Very Low	Low	Moderate	High	Critical

Gulf CDC Risk Assessment of this Event – 2024

- **Risk Question:** 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?
- **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 Ib cases, it is likely that unlinked cases/clusters to be detected within the next 3 months.

Please refer to the Gulf CDC Rapid Risk Assessment: Mpox for further details (authorized access only).

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

9 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 (21)*

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 forecasted passenger volumes between the 5 African countries reporting the highest number of mpox clade I cases in 2025, and the Gulf region during August 2025 (22):

	DRC	Uganda	Sierra Leone	Burundi	Liberia
UAE	2290	13291	407	935	134
Bahrain	30	79	3	8	-
Saudi Arabia	338	3005	139	355	35
Oman	68	83	29	28	13
Qatar	172	1471	23	20	29
Kuwait	61	210	29	9	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

- A **recent study published on 14 August 2025** highlighted that **fast-track regulatory tools** used during COVID-19, such as the WHO's Emergency Use Listing (EUL) and the U.S. FDA's Emergency Use Authorization (EUA), could also be adapted to **accelerate mpox vaccine**

approvals, using methods like rolling reviews and adaptive trial designs to ensure safe and timely access (23).

- Multiple countries have recently reported **new or suspected cases of mpox**, though the **specific virus clade has not been identified** in these reports. These include The Gambia, Ghana, the Philippines, the Democratic Republic of Congo (DRC), Kenya, Panama, Pakistan, and Honduras, as well as regional updates shared by the African Union. The cases vary in severity and context, from isolated travel-related detections to suspected localized clusters under investigation.
- **Cases in Africa:** The Africa CDC reported a 58% decline in mpox cases across the continent between epidemiological weeks 19 and 30 of 2025, marking a positive shift in outbreak trends (24).

Table 2. Cumulative number of confirmed mpox cases and deaths reported by African countries, 2025 (25)

Country	Confirmed cases*	Deaths among confirmed cases
Angola	4	0
Burundi	1,377	0
Cameroon	5	0
Central African Republic	21	0
Congo	67	1
Côte d'Ivoire	23	0
Democratic Republic of Congo	14,702	700
Ethiopia	26	1
Ghana	1	0
Guinea	372	1
Kenya	549	0
Liberia	316	6
Malawi	449	0
Morocco	68	1
Mozambique	2	0
Nigeria	38	0
Rwanda	270	4
Sierra Leone	42	0
South Africa	5,115	50
South Sudan	11	0

Tanzania	20	0
Togo	124	0
Uganda	59	0
Zambia	6,536	41

*Africa CDC defines confirmed cases as laboratory confirmed.

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. السودان: وفاة 3 أطفال عقب تطعيمهم ضد الحصبة [Internet]. [cited 2025 Aug 31]. Available from: https://www.al-ayyam.ps/ar/Article/417107/%D8%A7%D9%84%D8%B3%D9%88%D8%AF%D8%A7%D9%86-%D9%88%D9%81%D8%A7%D8%A9-3-%D8%A3%D8%B7%D9%81%D8%A7%D9%84-%D8%B9%D9%82%D8%A8-%D8%AA%D8%B7%D8%B9%D9%8A%D9%85
2. ارتفاع إصابات الكوليرا في شمال دارفور - صحيفة الراكوبة [Internet]. [cited 2025 Aug 31]. Available from: https://www.alrakoba.net/32070227/%D8%A7%D8%B1%D8%AA%D9%81%D8%A7%D8%B9-%D8%A5%D8%B5%D8%A7%D8%A8%D8%A7%D8%AA-%D8%A7%D9%84%D9%83%D9%88%D9%84%D9%8A%D8%B1%D8%A7-%D9%81%D9%8A-%D8%B4%D9%85%D8%A7%D9%84-%D8%AF%D8%A7%D8%B1%D9%81%D9%88%D8%B1/
3. أخبار وتقارير - تقرير حديث يكشف عن حالات الإصابة والوفيات بالكوليرا والحصبة في مناطق الحوثي [Internet]. [cited 2025 Aug 31]. Available from: https://www.adngad.net/news/808690
4. بالأرقام.. الصحة تعلن حصيلة كبيرة لإصابات ووفيات الحمى النزفية - الفرات نيوز [Internet]. [cited 2025 Aug 31]. Available from: https://alforatnews.iq/news/%D8%A8%D8%A7%D9%84%D8%A3%D8%B1%D9%82%D8%A7%D9%85-%D8%A7%D9%84%D8%B5%D8%AD%D8%A9-%D8%AA%D8%B9%D9%84%D9%86-%D8%AD%D8%B5%D9%8A%D9%84%D8%A9-%D9%83%D8%A8%D9%8A%D8%B1%D8%A9-%D9%84%D8%A5%D8%B5%D8%A7%D8%A8%D8%A7%D8%AA-%D9%88%D9%88%D9%81%D9%8A%D8%A7%D8%AA-%D8%A7%D9%84%D8%AD%D9%85%D9%89-%D8%A7%D9%84%D9%86%D8%B2%D9%81%D9%8A%D8%A9
5. WHO EMRO | MERS outbreaks | MERS-CoV | Health topics [Internet]. [cited 2025 Aug 31]. Available from: https://www.emro.who.int/health-topics/mers-cov/mers-outbreaks.html
6. Pakistan reports 18th polio case of 2025 [Internet]. [cited 2025 Aug 31]. Available from: https://arynews.tv/pakistan-reports-18th-polio-case-of-2025
7. New Polio case detected in Rahim Yar Khan [Internet]. [cited 2025 Aug 31]. Available from: https://www.nation.com.pk/31-Jul-2025/new-polio-case-detected-in-rahim-yar-khan
8. Pakistan Reports Two More Polio Cases [Internet]. [cited 2025 Aug 31]. Available from: https://menafn.com/1109942132/Pakistan-Reports-Two-More-Polio-Cases
9. Polio Cases Update 2020 | Across Pakistanu2019s Provinces [Internet]. [cited 2025 Aug 31]. Available from: https://www.endpolio.com.pk/polioin-pakistan/polio-cases-in-provinces
10. Public Health Situation Analysis - occupied Palestinian territory [Internet]. [cited 2025 Aug 31]. Available from: https://www.who.int/publications/m/item/public-health-situation-analysis---occupied-palestinian-territory
11. صحة غزة: تسجيل 45 حالة شلل رخو حاد خلال شهرين بحرب الإبادة الإسرائيلية [Internet]. [cited 2025 Aug 31]. Available from: https://palinfo.com/news/2025/07/22/964014/

12. Facebook [Internet]. [cited 2025 Aug 31]. Available from: https://www.facebook.com/photo/?fbid=1175121914644570&set=pcb.1175121951311233
13. Cambodia reports new H5N1 bird flu case in 6-year-old girl - BNO News [Internet]. [cited 2025 Aug 31]. Available from: https://bnonews.com/index.php/2025/08/cambodia-reports-new-h5n1-bird-flu-case-in-6-year-old-girl/
14. Human case of avian influenza A(H5N1) confirmed in 10-year-old girl in Cambodia [Internet]. [cited 2025 Aug 31]. Available from: https://laverdad.com.mx/2025/08/confirman-caso-humano-de-gripe-aviar-ah5n1-en-nina-de-10-anos-en-camboya/
15. Avian Flu Diary: Cambodian MOH Announces 14th H5N1 Case of 2025 [Internet]. [cited 2025 Aug 31]. Available from: https://afludiary.blogspot.com/2025/07/cambodian-moh-announces-14th-h5n1-case.html
16. Confirmations of Highly Pathogenic Avian Influenza in Commercial and Backyard Flocks | Animal and Plant Health Inspection Service [Internet]. [cited 2025 Aug 31]. Available from: https://www.aphis.usda.gov/livestock-poultry-disease/avian/avian-influenza/hpai-detections/commercial-backyard-flocks
17. Press Release:Press Information Bureau [Internet]. [cited 2025 Aug 31]. Available from: https://www.pib.gov.in/PressReleasePage.aspx?PRID=2150207
18. China customs bans poultry imports from Spain for bird flu - Global Times [Internet]. [cited 2025 Aug 31]. Available from: https://www.globaltimes.cn/page/202508/1340623.shtml
19. Nakayama M, Kitagawa N, Nguyen CT, Sasamura T, Takashima K, Ishigaki H, et al. Long-term efficacy of an inactivated H5N1 whole-particle influenza vaccine in nonhuman primates. NPJ Vaccines [Internet]. 2025 Dec 1 [cited 2025 Aug 31];10(1):1–12. Available from: https://www.nature.com/articles/s41541-025-01221-x
20. Fabrizio TP, Kandeil A, Harrington WN, Jones JC, Jeevan T, Andreev K, et al. Genotype B3.13 influenza A(H5N1) viruses isolated from dairy cattle demonstrate high virulence in laboratory models, but retain avian virus-like properties. Nature Communications 2025 16:1 [Internet]. 2025 Jul 23 [cited 2025 Aug 31];16(1):1–12. Available from: https://www.nature.com/articles/s41467-025-61757-3
21. Global Mpox Trends [Internet]. [cited 2025 Jul 24]. Available from: https://worldhealthorg.shinyapps.io/mpx_global/
22. BlueDot. Forecasted Air Travel Volumes [Internet]. 2025 [cited 2025 Aug 31]. Available from: https://portal.bluedot.global/
23. Li S, Yu X, Yao Y, Yao T, Xu M. Accelerating the approval of mpox vaccines based on lessons learnt from COVID-19 vaccines through the lens of regulatory science. BMJ Glob Health [Internet]. 2025 Aug 14 [cited 2025 Aug 31];10(8):18517. Available from: https://gh.bmj.com/content/10/8/e018517
24. Africa CDC Reports Decline In Mpox Cases [Internet]. [cited 2025 Aug 31]. Available from: https://aljazirahnews.com/africa-cdc-reports-decline-in-mpox-cases/
25. Africa CDC Epidemic Intelligence Weekly Report, August 2025 – Africa CDC [Internet]. [cited 2025 Aug 31]. Available from: https://africacdc.org/download/africa-cdc-epidemic-intelligence-weekly-report-august-2025/