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Monthly Epidemic Intelligence Report

A Report by Public Health Emergency Department

Issue 01

January 2024

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 **January 2024** (January 1 to 23, 2024)*

87

Disease
Signals

2

Potential
Threats

4

Events of
Regional Interest

Executive Summary

Disease Signals This month, the epidemic intelligence team at Gulf CDC detected 87 signals of unusual news related to biological/infectious hazards. Most signals were related to arboviral diseases, primarily in Central Asia and South America. There were also a high number of signals on increased measles detections, mostly in the United States and European countries. Some signals of increased cholera detections were identified among countries in Africa.

Potential Threats The Gulf CDC identified two potential public health threats that could impact the GCC region. The first one is an ongoing outbreak of a vector-borne pathogen (Yellow Fever) in South Sudan. Given the presence of the disease vector and possibility of urban outbreaks in densely populated areas, this outbreak was deemed a potential threat to the GCC. Secondly, increased global reports and detections of measles, largely due to disrupted vaccination programs during the pandemic and vaccine hesitancy, were noted as a possible threat.

Events of Regional Interest The Gulf CDC closely monitored four events in January 2024: dengue globally, malaria in malaria-free certified countries, highly pathogenic avian influenza H5N1 worldwide, and diphtheria with a focus on West Africa. Daily monitoring of these events did not reveal any changes to the risk levels assessed for GCC or public health recommendations over the reporting period.

* Monthly reports cover data from 23rd of the previous month to 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 within the Gulf Public Health Emergency Network (PHEN) (available with restricted access 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 and Threats

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, highly transmissible pathogens, high vulnerability of GCC populations to the hazard, low capacity of GCC health systems to respond to the hazard.



● Number of detected signals by the Gulf CDC from January 1 to 23, 2024

Potential Threats Identified in January 2024

- **Measles, globally:** a global increase in reported measles cases is being closely monitored due to measles being the most contagious disease worldwide and its high fatality rate. There are concerns about varying vaccination coverage among countries and increasing vaccine hesitancy in Europe and North America.
- **Yellow fever in South Sudan:** This is a potential threat as it highlights the possibility of a larger ongoing outbreak and potential risk of further spread of yellow fever in South Sudan



Events of Regional Interest

Diphtheria

West Africa

Negligible	Very Low	Low	Moderate	High	Critical
GULF CDC RISK ASSESSMENT OF THIS EVENT					
<ul style="list-style-type: none"> Impact: Minor, rare disease in the Gulf Region and immunization coverage estimates for diphtheria, tetanus toxoid, and pertussis (DTP) in 2022 are high, but vary across GCC countries Likelihood: Likely, due to significant population movement between GCC countries and regions where diphtheria is reported. 					



WHY IS THIS AN EVENT OF REGIONAL INTEREST?

Low vaccine uptake in West Africa region, with risk of further spread and declining healthcare capacity to manage the outbreak, opening the possibility for further outbreaks. Small risk of importation to Gulf region.





KEY STATS

24,940 Reported Cases, since May 2022	3.1% Case Fatality Ratio	5 Affected countries
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KEY FACTORS OF CONCERN FOR DIPHTHERIA

 Disease severity	Diphtheria is a vaccine preventable disease considered to have a moderate pathogen severity. The case fatality rate for diphtheria can be up to 10%.
 Trends from previous outbreaks	This diphtheria outbreak has been ongoing in West Africa since December 2022 (Nigeria- December 2022, Niger – July 2023, Guinea – July 2023). The ongoing outbreak in Nigeria is the largest reported since 1989 when over 5,000 people were infected. In November 2023, Nigeria surpassed 17,000 cases of infection. (1)

 <p>Healthcare capacity</p>	<p>Vaccine coverage of 80-85% is estimated to provide community protection. Countries in West Africa experiencing diphtheria outbreaks including Guinea, Niger and Nigeria have low immunization rates. All three countries are experiencing a high number of reported cases, in addition to limited healthcare capacity to handle the outbreaks. (2) According to a December WHO Regional Health Emergency Situation Report, over 56% of documented cases are unvaccinated and over 57% of suspected cases are under the age of 15. (3)</p>
 <p>Connectivity to the Gulf Region</p>	<p>Connectivity and importation risk from the affected countries in West Africa to the Gulf region is generally low. However, there is a 16% importation likelihood that at least one infected traveller from Nigeria will arrive in Saudi Arabia and a 2% likelihood that at least one infected traveller from Guinea will arrive in the United Arab Emirates in the next 30 days. Historical passenger volumes from February 2023 are included in Figure 2 below, to understand historical total passenger volumes between the most affected countries and GCC countries. Nigeria is the most affected country and has the highest number of passengers to GCC countries.</p>



SITUATIONAL HIGHLIGHTS FOR DIPHTHERIA

- As of December 17, 2023, over 24,000 suspected cases of diphtheria were reported across 5 countries (Nigeria, Guinea, Niger, Mauritania and South Africa). (4)
 - The outbreak in the Western Cape Province of South Africa has been successfully contained.
 - Nigeria is the most severely affected country, accounting for 83.1% of cases and 72.4% of deaths. Officials estimate the toll could be much higher across regions unable to detect many cases and deaths.
- In January 2024, Nigeria continued reporting high cases (487) of diphtheria. This is a 6% increase in cases reported for the same period last year. (5)
- There is a notable surge in weekly cases in Guinea, while there is an observed decline in the remaining affected countries.
- Vaccination coverage in West African countries remains low. According to Médecins Sans Frontières, almost 65% of diphtheria patients in West Africa have never received a single dose of the vaccine. (2)

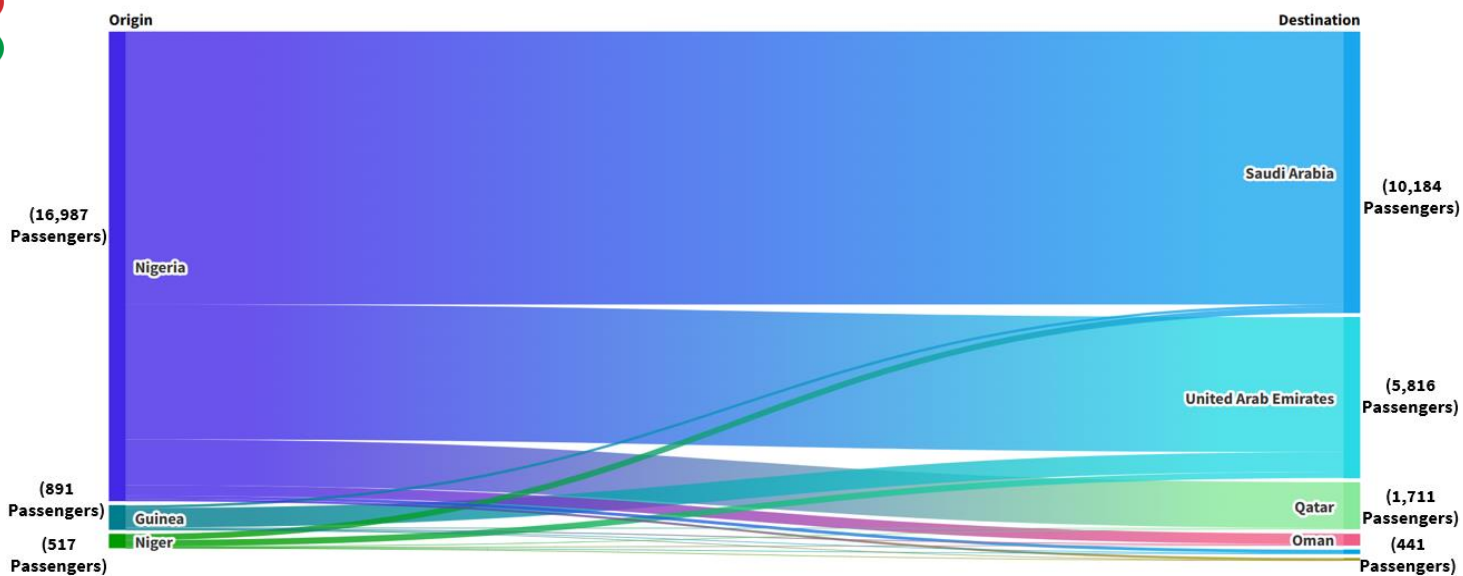


Figure 2: Total historical passenger volumes between Nigeria, Guinea, and Niger and GCC countries, February 2023
(Data on travel volumes and importation risk provided by BlueDot Inc.)

Avian Influenza H5N1

Cambodia

Negligible	Very Low	Low	Moderate	High	Critical
GULF CDC RISK ASSESSMENT OF THIS EVENT					
<ul style="list-style-type: none"> Impact: Low, zoonosis programs are available or being established. Case management capacities in GCC countries for influenza infections are generally high. Likelihood: Unlikely, as there is currently no global evidence of human-to-human transmission. 					



WHY IS THIS AN EVENT OF REGIONAL INTEREST?

While there is no evidence of sustained transmission of avian influenza viruses among humans, cases and transmission events may contribute mutations to support human-to-human transmissions.



KEY STATS

2

New reports of human infection with H5N1 January 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 across 6 countries (Cambodia, China, Chile, United Kingdom, Brazil, Vietnam). In years prior, there have been small numbers of reported human infection cases of H5N1 across sporadic countries.



Public Health Response

The Cambodian Ministry of Health's national and sub-national rapid response teams, with support from the Ministry of Agriculture, Forestry and Fisheries, and the Ministry of Environment, have initiated and coordinated the detailed investigation of the cases, including searching for additional suspected cases and contacts, collecting and testing samples from backyard birds and conducting health education campaigns to prevent transmission in the community. (5)



SITUATIONAL HIGHLIGHTS FOR AVIAN INFLUENZA H5N1

- There are 2 new reports of human infection with H5N1 in Cambodia in January 2024 (5)
 - The cases involve a three-year old boy from southeast Cambodia's Prey Veng province and a 69-year-old man from northwest Cambodia's Siem Reap province.
 - Both cases seem unrelated, as the approximate distance between both provinces is 275 kilometres when travelling by road, and both cases occurred with a close time frame.
- This remains an event of interest due to the poultry mortality event and the possibility of additional exposed individuals.
- In a December 2023 policy brief, the World Organization for Animal Health (WOAH) said avian flu outbreaks are having a devastating impact on poultry, wild birds, and other wild animals, and threaten livelihoods, food supply and public health. The rapidly evolving virus and spread to new geographic regions require a review of existing prevention and control strategies, as current methods may no longer be sufficient to control the disease. (6)
- While sporadic cases can be expected, there is an additional risk for infectious among those in close contact with sick or dead poultry or individuals who are in proximity to contaminated environments.
- While there is no evidence of sustained transmission of avian influenza among humans at this time, additional cases and transmission cases within the current event may contribute mutations to support human-to-human transmission.



Malaria

Globally

Negligible	Very Low	Low	Moderate	High	Critical
GULF CDC RISK ASSESSMENT OF THIS EVENT					
<ul style="list-style-type: none"> Impact: Moderate, given current capacities of the GCC countries, impact would be manageable Likelihood: Unlikely, travel related cases are most likely from some Southeast Asian countries and Ethiopia in particular. However, expats from affected countries who are travelling to work in the GCC are requested to test negative for Malaria, and therefore the importation estimate should be lower. 					



WHY IS THIS AN EVENT OF REGIONAL INTEREST?

The continued trends of growing malaria cases on a global level demonstrates the growing impact and continued threat of climate change. These changes could result in previously malaria-free countries to become susceptible to the vectors carrying malaria.



KEY STATS

13

Malaria endemic countries reporting upward trends

95%

Importation risk from Ethiopia and Pakistan to the Gulf Region






KEY FACTORS OF CONCERN FOR MALARIA



Disease severity

Malaria is a mosquito-borne disease considered to have a severe pathogen severity. A case of malaria is considered a medical emergency due to its capacity to rapidly progress to severe malaria and death without prompt and appropriate treatment. Specific treatment for malaria is widely available in endemic locations.

 <p>Trends from previous outbreaks</p>	<p>Growing number of malaria cases over the last quarter of 2023 (and throughout 2023) in countries where malaria is endemic, countries that had previously made great progress towards malaria elimination and locally transmitted cases in malaria-free countries.</p>
 <p>Healthcare capacity</p>	<p>While treatment for malaria is widely available, particularly in malaria-endemic countries, an imported case in a malaria-free country may prove difficult and timely to diagnose, which can lead to more severe health outcomes and strains on the healthcare system.</p>
 <p>Connectivity to the Gulf Region</p>	<p>Connectivity and importation risk is high for some affected countries. There is a 95% chance that at least one infected traveller from Ethiopia and from Pakistan will travel to the Gulf region (Saudi Arabia, Qatar, UAE, Bahrain, Kuwait).</p>



SITUATIONAL HIGHLIGHTS FOR MALARIA

- **Endemic countries with upward trends:** Sudan, Angola, Pakistan, DRC, Zimbabwe, Senegal, and Burkina Faso. The impact of climate change and extreme weather events on malaria transmission continues to be dramatically demonstrated with the floods in Pakistan, resulting in a five-fold increase in malaria cases since mid-2022.(7)
 - Additional endemic countries reporting high burden of malaria cases during December 2023 from data received through event-based surveillance include India, Panama, Namibia, Venezuela, Ethiopia, and Vietnam.
- Resurgence of malaria in countries that had previously made great progress towards malaria elimination:
 - Ethiopia: mostly in the Oromiya Region. The likely reason has been tied to an invasive mosquito species *Anopheles stephensi*.(8) This species is usually endemic to southern and Western Asia (India and Iran) but in 2012, it was identified in Africa for the first time, in Djibouti, and subsequently was found for the first time in Ethiopia.
 - It has also been found in neighbouring Sudan and Somalia, as well as in Nigeria.(9)
- **Imported cases in malaria-free countries:** Imported cases always highlights that the burden of the disease from the origin country is likely larger than official case counts and is also a reminder that as far as a disease exists, there are further risks of re-emergence, specifically with climate change and where favourable conditions are suited for further spread.
 - An imported case that resulted in a death was reported in Cremona, Lombardy region in northern Italy, in a returning traveller from Cameroon.
 - While historically, epidemiological evidence shows that the risk of malaria spread in Italy associated with imported events is low, even in the areas considered most vulnerable, the

associated death should always serve as an alert of the need to maintain a high and constant level of surveillance for this disease, since malaria associated, deaths are usually related to delayed diagnosis.

- Similar imported cases were identified in malaria-free countries (Taiwan and Belarus) and in countries where malaria risk is low (Panama) in December 2023
- **Malaria emergence of *P. knowlesi* (10):**
 - *P. knowlesi* is an emerging pathogen with a higher clinical severity presentation and higher mortality rates when compared with other more common Plasmodium species (such as *P. falciparum*, *P. ovale*, and *P. vivax*).
 - Many malaria cases of *P. knowlesi* may likely go undetected and be assumed to be caused by one of the other more common Plasmodium species given laboratory resourcing challenges.
 - Increasing trends of malaria continued to be reported in the last quarter in Malaysia with at least a 30% when compared to baseline and attributed to the emergent species. Similarly, Thailand has recently reported increases in malaria trends.
- **Increasing malaria resistance:** On a global scale, parasite resistance to artemisinin has been identified in the Greater Mekong subregion and several areas in Africa – notably Eritrea, Rwanda and Uganda. Uganda has been highlighted as one of the countries with the highest burden of malaria since late 2022 (11).

Dengue

Globally

Negligible	Very Low	Low	Moderate	High	Critical
GULF CDC RISK ASSESSMENT OF THIS EVENT					
<ul style="list-style-type: none"> • Impact: Minor, based on current capacities of the GCC countries, if cases of dengue are imported or local transmission occurs, the impact would be manageable due to the robust public health systems and infrastructure of GCC countries. • Likelihood: Almost certain, that there will be importation of dengue cases, and potential local transmission due to the DENV vectors present in several Gulf countries. 					



WHY IS THIS AN EVENT OF REGIONAL INTEREST?

Like malaria, continued trends of growing dengue cases on a global level demonstrates the growing impact and continued threat of climate change. In recent months, there has been a re-appearance of dengue at geographies where cases have been historically imported.



KEY STATS

3

Countries with first historical documented dengue outbreaks

570%

Increase in current dengue season in select South and Central American countries compared to 5-year average



KEY FACTORS OF CONCERN FOR DENGUE



Disease severity

Dengue is a mosquito-borne disease considered to have a moderate pathogen severity. It is the most ubiquitous arbovirus that affects human. There is limited vaccine availability and no specific treatment for dengue.



Trends from previous outbreaks


Growing number of dengue cases over the last several months in countries where dengue is endemic, particularly South and Central America.



Healthcare capacity

Since there is no specific treatment for dengue, its management involves supportive care. Severe cases can lead to shock and respiratory distress with

	<p>haemorrhagic tendencies, which can place stress on limited healthcare capacity, particularly in dengue-endemic countries. An imported case in a dengue-free country, or newly transmitted local cases in geographies with no recent history of dengue cases may prove difficult and timely to diagnose, which can lead to more severe health outcomes and strains on the healthcare system.</p>
 <p>Connectivity to the Gulf Region</p>	<p>Connectivity and importation risk is high for some affected countries. There is a 95% chance that at least one infected traveller from Southeast Asia (Malaysia, Thailand, India, Vietnam, Philippines, Bangladesh, Indonesia) will travel to the Gulf region (Saudi Arabia, Qatar, UAE, Bahrain, Kuwait).</p>


SITUATIONAL HIGHLIGHTS FOR DENGUE

- **Endemic countries with a significant burden** (higher than expected by seasonal trends), and/or reporting in areas without previously known local cases:
 - **Southeast Asia:** an unusual dengue surge (in terms of seasonality and early sharp increase in comparison to previous years) in Bangladesh, high case activity in Thailand and Sri Lanka (12).
 - **Central and South America:**
 - Many countries in Central and South America are seeing significant increases in comparison with previous seasons. Some notable examples are Argentina (15% increase compared to 2022, 658% increase compared to past 5 year average), Bolivia (387% increase compared to 2022, 1,132% increase compared to past 5 year average), Costa Rica (201% increase compared to 2022, 232% increase compared to past 5 year average), Guatemala (612% increase compared to 2022, 303% increase compared to past 5 year average), and Peru (335% increase compared to 2022, 759% increase compared to past 5 year average).
 - Figure 3 below shows select countries (Argentina, Bolivia and Peru) exemplifying the sharp increase in dengue cases in South America in the second half of 2023. Annual baselines for the three countries are between 25 and 50 cases per 100,000 people cumulatively (accounting for some variation between subnational locations). All countries surpassed their annual baselines in the first half of 2023.
 - While some of these trend increases can be attributed to improved consistency of reporting, the stark increase in comparison to the 5-year average demonstrates that the dengue burden in the region of the world that holds the largest dengue burden is becoming more critical. (13)
 - **Africa:** The burden of dengue in Africa is not well understood due to i) similarity of common, non-specific clinical symptoms of the disease with malaria and other tropical febrile illnesses; ii) limited laboratory capacity for timely detection and confirmation of dengue, which is crucial for detecting and reporting cases and preventing its spread; and iii) inadequate surveillance and limited case reporting, especially for dengue.(14)

- Some notable examples of high dengue cases reported in Africa in recent weeks include Burkina Faso, Cape Verde, Sudan, and Niger
- First-confirmed outbreaks in countries where dengue is likely under-reported, poorly described and studied: Chad, Bonaire, and Sant Eustatius
- **Non-endemic countries where the vector is present and have confirmed local cases:** Sporadic autochthonous cases have been reported recently in the United States, France, Spain and Italy, where historically most of the cases are imported
- **Presence of the vector *A. aegypti* recently confirmed, no evidence of local transmission:** Bahrain, Iran, Qatar, Madeira in Portugal and Cyprus have reported the presence of *Ae. aegypti* recently, although no local transmission of dengue has been documented.
- **Spatial and temporal shifts in dengue patterns were observed in 2022 and continued in the last quarter of 2023:** Cases in Nepal shifted from the Kathmandu Valley in 2022 to the southeast Terai region and hill districts in Gandaki province in 2023. India, in 2023, experienced an increase in cases in Kerala and northeastern States bordering Bangladesh compared to the previous year. These types of trends are expected to continue into early 2024, as dengue seasons shift in different regions.

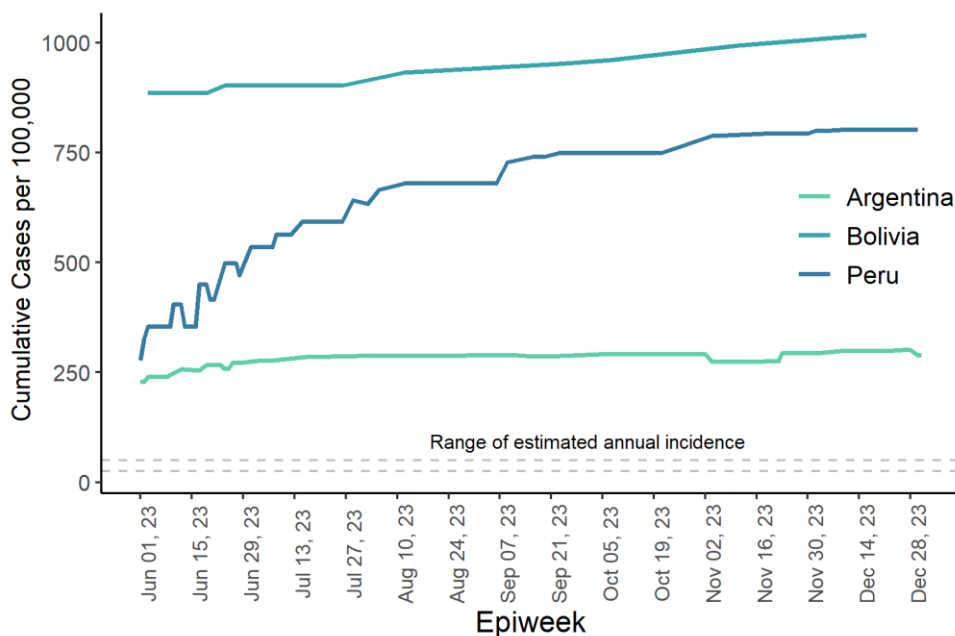


Figure 3: Cumulative cases of Dengue per 100,000 for Argentina, Bolivia and Peru compared to the estimated annual incidence per 100,000

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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