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 03

March 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.

Threat

Any signal as assessed by the Gulf CDC PHE Department to have the potential to pose a near-future risk to the GCC countries' populations.

Threat of Regional Interest

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

Summary of the Month

This monthly report provides an overview of the signals, potential threats, and specifically Events of Regional Interest detected and identified through the Gulf CDC Epidemic Intelligence system during the month of **March 2024** (February 24 – March 21, 2024).*

75	2	1	3
Disease Signals	**CRNE Signals**	**Threat of Regional Interest**	**Events of Regional Interest**

Executive Summary

Disease Signals This month, the epidemic intelligence team at Gulf CDC detected 77 infectious disease signals.

CRNE Signals In addition to infectious diseases, the team identified 2 CRNE signals of unusual environmental hazards with potential public health consequences.

Threat of Regional Interest The Gulf CDC identified 1 threat of regional interest that could impact the GCC region: Pertussis (whooping cough) - globally.

Events of Regional Interest the Gulf CDC closely monitored three events of regional interest in March 2024: measles - globally, yellow fever in South Sudan, 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.

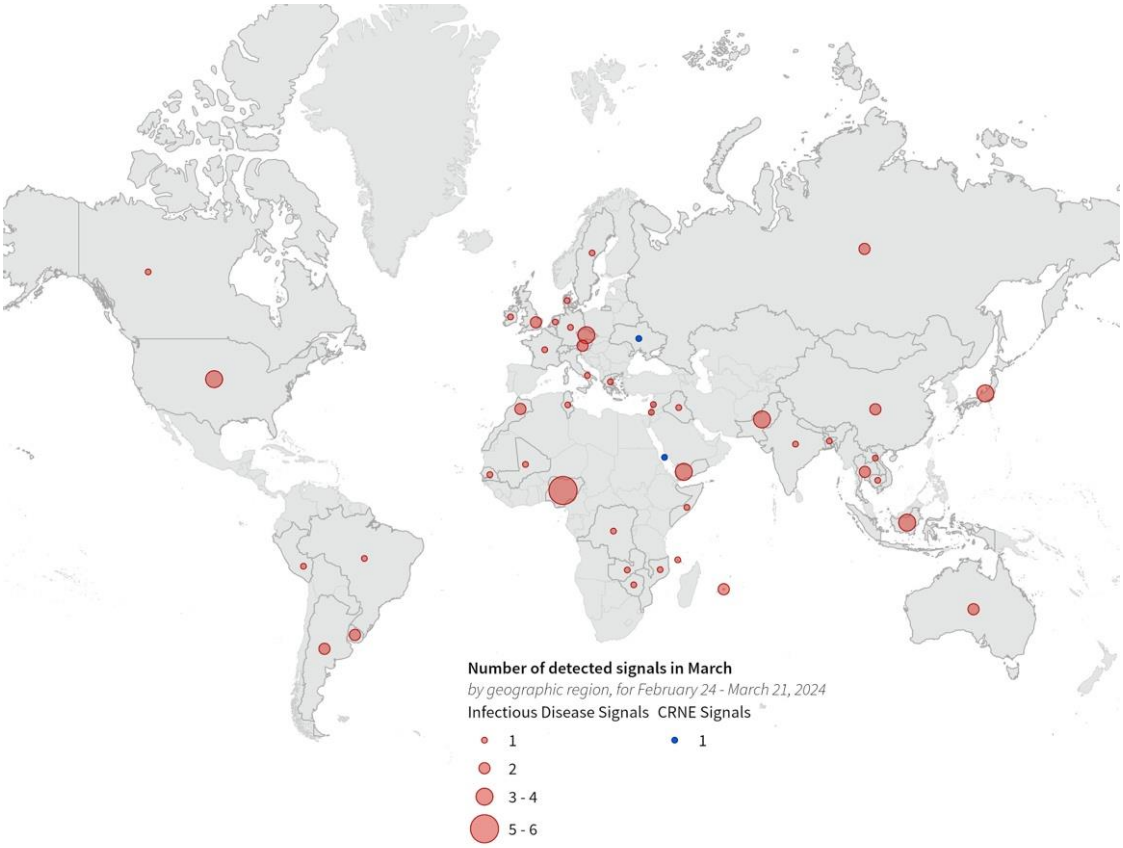
* Monthly reports cover data from the 24th of the previous month to the 21st of the reported month, ensuring there is no gap in reported data.

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 with restricted access) 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 Potential 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 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 by the Gulf CDC from February 24 to March 21, 2024**

Threat of Regional Interest

Pertussis (whooping cough)

Globally

This threat is being monitored closely by Gulf CDC.

Key Stats

10-fold increase

In global reported pertussis cases in the first 3 months of 2024 as compared to the same period in 2023

Key Factors of Concern for Yellow Fever	
Disease severity	Pertussis, also known as whooping cough, is a highly contagious respiratory infection caused by the bacterium *Bordetella pertussis.* Pertussis is a disease that affects primarily children and can lead to severe complications such as pneumonia, encephalopathy, and seizures. Case fatality rates are less than 2%.
Trends from previous outbreaks	Prior to the COVID-19 pandemic, the European and Western Pacific WHO regions had consistently high reported cases of pertussis (average of 59,000 cases for the European region and average of 41,900 cases for the Western Pacific region from 2015-2019). Reported cases decreased significantly in 2020 and 2021 and began to rise again in 2022.[1]
Healthcare capacity	There is wide vaccine availability and treatment for pertussis. However, like other vaccine-preventable disease trends observed since the onset of the COVID-19 pandemic, there is declining vaccine confidence and low rates of pertussis vaccine coverage in some countries. WHO estimates coverage of DTP vaccine, 1st dose, to be 89% globally. The lowest estimated coverage is for the African region (80%) and the highest being the European region (97%). However, given recent case increases, the gap in vaccination coverage appears to be increasing.[2]

Connectivity to the Gulf Region	Some countries experiencing pertussis outbreaks have a high degree of connectivity to the Gulf region, resulting in high levels of importation risk.
	• The highest risk of importation comes from the United Kingdom:
	  ○ 95% risk of importation to the UAE
	  ○ 72% risk of importation to Saudi Arabia

- 38% risk of importation to Qatar
- 19% risk of importation to Kuwait
- 16% risk of importation to Bahrain
- 12% risk of importation to Oman

- Additionally, the UAE has a high risk of importation of pertussis from:
  - Czechia (63%)
  - Spain (46%)
  - The Netherlands (41%)

Situational Highlights for Pertussis (Whooping Cough)

- Pertussis (also known as whooping cough) surveillance is challenging and there are limited official statistics with which to understand global trends. Reported cases are influenced by factors including healthcare access and access to testing services, availability of testing supplies, and prevalence of asymptomatic/mildly symptomatic cases; hence disease burden is largely underestimated.
- Event-based surveillance data for 2023 indicated a 9-fold increase in reported pertussis cases in Europe as compared to 2022 official WHO data.
- Global reported cases (through event-based surveillance) for January – March 2024 show a 10-fold increase as compared to the same period in 2023.
  - Most notably, the European region is reporting high case counts since the start of 2024 (14,546 reported cases as of 19 March 2024), with Spain (4,097 reported cases), Czechia (3,101 reported cases), the United Kingdom (2,500 reported cases), the Netherlands (1,400 reported cases) and Serbia 1,051 cases) reporting the highest cases within the region.
    - In the United Kingdom, Public Health Wales confirmed that the current wave of pertussis cases is the highest it has been since 2015, and attributes it to vaccination rates that have fallen from above 80% to below 70%.[3]
  - The United States has reported 1,421 cases between 1 January and 19 March 2024, with about half the number of reported cases (756) in the same period in 2023.
  - Australia has reported 500 cases between 1 January and 19 March 2024 with 0 reported cases in the same period in 2023.
    - Australia health authorities noted that of the ~2,500 cases reported in 2023, 40% of these happened in the last 6 weeks of the year.[4]
  - Israel has reported 588 cases between 1 January and 19 March 2024 with 0 reported cases in the same period in 2023.
  - China reported 38,295 cases in 2023. Before 2022, there were between 3,000 and 4,000 cases reported annually, except for 2019, when they reported 47,034.[5]

Events of Regional Interest

Measles

Globally

Negligible	Very Low	Low	Moderate	High	Critical

Gulf CDC Risk Assessment of this Event

- **Risk Question:** What is the risk of a significant number of measles cases being imported into the GCC Region in the upcoming 6 months, in terms of the likelihood and impact of the importation?
- **Impact:** Moderate. Despite an increase in likelihood, the impact remains moderate, due to varying immunization coverage across the region, potentially exacerbated by upcoming mass gatherings.
- **Likelihood:** Almost certain. The likelihood of measles importation to the GCC countries from countries with current measles outbreaks **has been escalated** to almost certain driven by the detection of several cases with travel history to the UAE and the high travel volume from endemic regions and countries reporting an increase in measles cases.

Please refer to the Gulf CDC Rapid Risk Assessment on Measles – Version 3 (updated 21 March 2024) for further details.

Why is this Notable?

The Gulf CDC EI team escalated the measles outbreaks globally from a potential threat to a threat of regional interest on 19 February because of an increase in the expected incidence of measles globally. On 21 March, the Gulf CDC EI team updated the RRA to a likelihood of 'almost certain,' due to the detection of several cases with travel history to the UAE.

Key Stats

1

Reported case in an individual who had been fully vaccinated against measles.

Key Factors of Concern for Measles

Disease severity	Measles is a virus most commonly transmitted between humans vias airborne route and respiratory droplets. It is considered to have a moderate severity level. It

	is highly contagious, needing hospitalization in 25% of people who are infected. Complications such as pneumonia, otitis media, meningitis and encephalitis may occur.
Trends from previous outbreaks	According to WHO data, there has been a 79% increase in reported measles cases from 2022 to 2023.[6] The most affected regions were the WHO European region, which reported 937 cases in 2022 and 58,115 cases in 2023; the WHO Eastern Mediterranean region, which reported 54,245 cases in 2022 and 88,598 cases in 2023, and the WHO South-East Asia region, which reported 49,492 cases in 2022 and 84,720 cases in 2023. There exist immunization gaps related to pandemic disruptions to routine public health programs and growing vaccine hesitancy in several regions including the United Kingdom, the United States and Europe, leading to recent concerning outbreaks.
Healthcare capacity	The WHO recommends a vaccination threshold of 95% for the Measles, Mumps, and Rubella (MMR) vaccine. According to the WHO, no region in 2022 met that suggested threshold for the 1st dose (the highest reporting regions were the European Region (93%), Western Pacific Region (92%), and South-East Asia Region (92%)).[7]

Situational Highlights for Measles

- **Global overview:** there continues to be a high number of measles cases across countries worldwide, including high-connectivity countries, neighboring countries with the Gulf region, and within GCC countries.
- **GCC countries:** According to WHO data[6], 5 of the 6 GCC countries reported suspected and confirmed measles cases in January and February 2024 (not official data reported by GCC countries to the Gulf CDC).
    - UAE: 74 confirmed cases and 126 suspected cases
    - Bahrain: 5 confirmed cases and 71 suspected cases
    - Saudi Arabia: 0 confirmed or suspected cases
    - Oman: 2 confirmed cases and 177 suspected cases
    - Qatar: 4 confirmed cases and 7 suspected cases
    - Kuwait: 2 confirmed cases and 8 suspected cases
- **Israel:** On 15 December 2023, the Ministry of Health in Israel indicated that an individual arriving in Tel Aviv's Ben Gurion Airport on 9 December 2023 from Dubai, UAE had tested positive for measles.[8]*
- **Japan:** On 8 March 2024, The Japanese Minister of Health, Labor, and Welfare reported two confirmed cases of measles amongst individuals who arrived at Osaka's Kansai International Airport on 24 February 2024 aboard a flight from the UAE, with the initial case in Higashi-Osaka City reported on 1 March 2024.[9]*
    - This was followed by at least seven secondary local infections confirmed in Osaka prefecture in Japan.

- The second and most recent case was confirmed on 8 March 2024, a woman in her 20s who was on that same flight, had received just one dose of a measles vaccine and is currently hospitalized in Tokyo.
- The WHO reports that in the Western Pacific Region measles cases went up by 255% from 2022 to 2023; increased travel within this region which includes Japan together with the gaps in population immunity highlighted by the Japan's National Institute of Infectious Disease measles risk assessment, indicates that further cases of measles in Japan are likely.[10]

- **Ireland:** On 12 March 2024, health authorities in Ireland confirmed a measles case among an individual who was onboard on a flight from Abu Dhabi and arrived in Dublin on 9 March 2024.[11]*
- **Yemen:** A concerning measles outbreak is spreading rapidly in Shabwa Zajil governorate, southern Yemen. at least 16 cases were identified through the isolation center to that was recently reactivated confront the outbreak, while a children's hospital in Shabwa has registered a further 170 cases, with 2 related deaths.[12][13]
- **The United States** has continued reporting high case numbers of measles since the February 2024 Monthly Report publish date.
  - As of 6 March 2024, there are at least 52 measles cases across 16 jurisdictions and states.
  - The CDC has raised concern over falling vaccination rates, stating that more than a quarter of a million unvaccinated kindergarteners entered schools last year. Official data shows that 7% of children are not up to date on their vaccines. The target level of children not up to date on their vaccines is 5% or lower. The share of children who are 'exempt' from having their school vaccinations is continuing to rise — hitting a record high according to CDC statistics.[14]
- **Canada** has reported 19 measles cases reported across four provinces of Canada (British Columbia, Ontario, Quebec, and Saskatchewan), as of 8 March 2024.
  - There are imported and community transmission cases.
  - Of note, one case reported on 29 February 2024 was in a man in his 30s who had no recent history of travel and had not been in contact with anyone who was symptomatic. Additionally, the individual was fully vaccinated against measles.[15] This case is of concern, as the confirmation of measles in a fully vaccinated individual with no known exposure history suggests that there may be a high level of community transmission ongoing.
- Between 1 January and 10 March 2024, **Romania** confirmed 5,125 cases and 5 deaths due to measles. Cases in the first 70 days of 2024 are almost double the total amount of cases that were reported in all of 2023.[16] Of note, 74% of confirmed measles cases reported to the European CDC were from Romania.[17]

** The UAE IHR focal point has confirmed that these cases are all among transit travellers.*

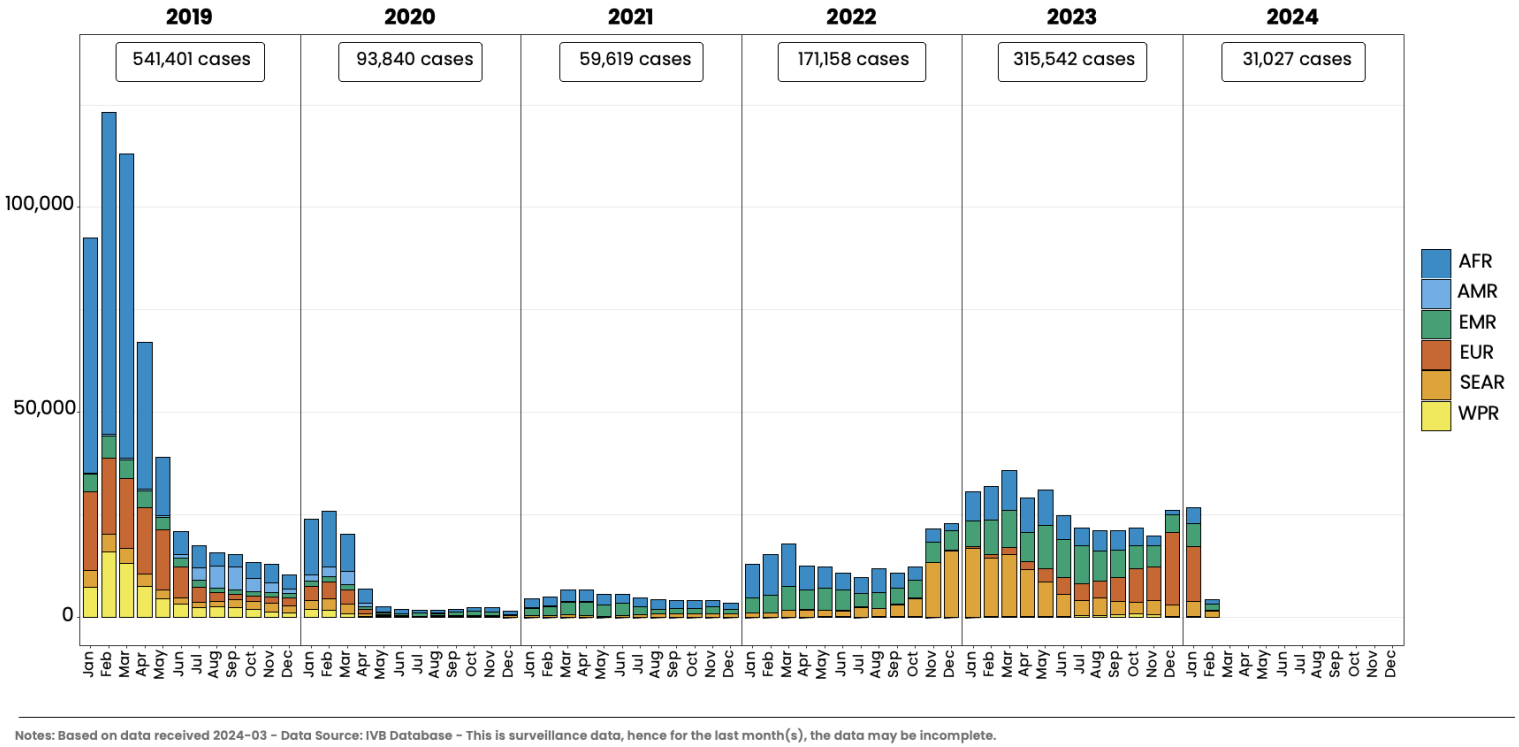


Figure 1: Measles case distribution by month and WHO region (2019-2024).[6]

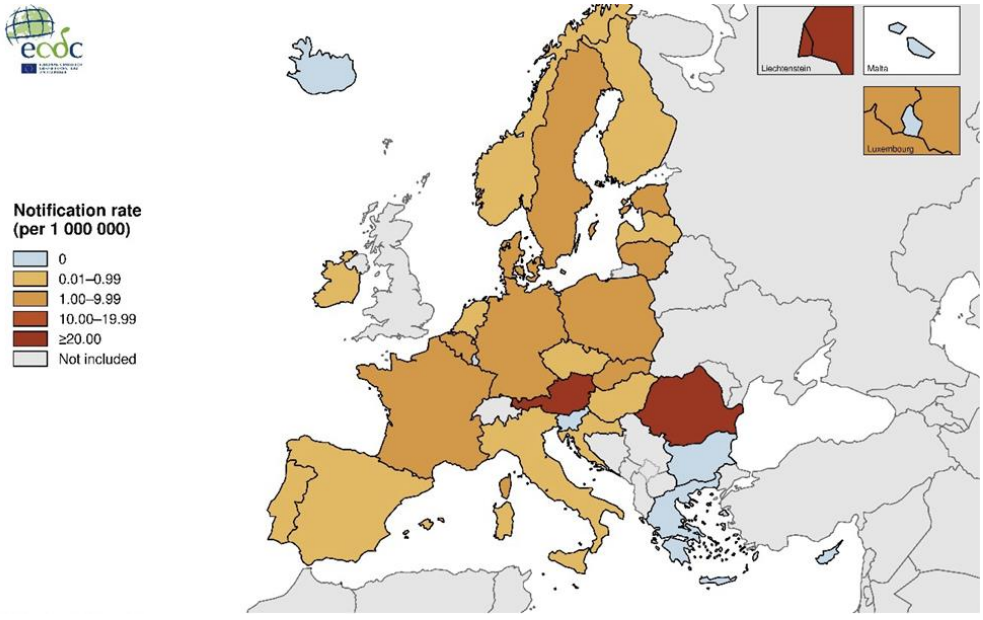


Figure 2: Number of measles cases per 1,000,000 population by country, EU/EEA 2023.[17]

Yellow Fever

South Sudan

Negligible	Very Low	Low	Moderate	High	Critical

Gulf CDC Risk Assessment of this Event

- **Risk Question:** What is the risk of one case of YF being imported into the GCC Region from South Sudan in the upcoming 3 months, in terms of likelihood and impact of the importation?
- **Impact:** Moderate, due to severity of disease and low rate of immunization against yellow fever among GCC country populations. Robust vector control measures are in place to combat mosquito-borne diseases.
- **Likelihood:** Unlikely, there is a low number of travelers forecasted to travel between South Sudan and GCC countries, and South Sudan MOH has reported that entry and exit screening is in place as all travelers are requested to present their yellow fever vaccination cards.

Please refer to the Gulf CDC Rapid Risk Assessment for further details.

Why is this Notable?

This event is of concern as it highlights the possibility of a larger ongoing outbreak and potential risk of further spread of yellow fever in South Sudan.

Key Stats

64
Suspected yellow fever cases

9.4%
Case fatality ratio

Key Factors of Concern for Yellow Fever

Disease severity	Yellow fever is a mosquito-borne disease considered to have a severe pathogen severity. It has a mortality rate of 15-50% in individuals who evolve from a flu like illness to a toxic phase. Prevention measures through immunization are available, however there are no approved treatments for yellow fever.

Trends from previous outbreaks	Since the beginning of 2023, a total of 13 countries in the WHO African Region (Burkina Faso, Cameroon, the Central African Republic, Chad, Republic of the Congo, Côte d'Ivoire, Democratic Republic of the Congo, Guinea, Niger, Nigeria, South Sudan, Togo and Uganda) have documented suspected and confirmed cases of yellow fever. According to the WHO, preliminary data for 2023 indicates a CFR of 11%.[18]
Healthcare capacity	South Sudan is classified as a high-risk country in the Eliminate Yellow Fever Epidemics initiative.[10] Population immunity is negligible. The vaccination campaign launched aims to protect populations at high risk and support in South Sudan's plans to introduce the yellow fever vaccine into their routine immunization systems. The country's previous experience with outbreaks allowed for rapid response team mobilization and improved surveillance to enhance case detection and reporting.
Connectivity to the Gulf Region	There is relatively low connectivity between South Sudan and GCC countries. The importation likelihood of yellow fever from South Sudan to GCC countries is less than 0.5%.* ** Connections between South Sudan and the region is primarily counted based on airline data. Other routes of entry and illegal migration might contribute to the importation likelihood*

Situational Highlights for Yellow Fever

- On 24 December 2023, the Ministry of Health in South Sudan confirmed an outbreak of yellow fever in Yambio County, Western Equatoria State, located close to the border with the Democratic Republic of the Congo.
    - As of 11 February 2024, 61 suspected and 3 confirmed yellow fever cases were reported from 6 counties of Western Equatoria State.[19]
    - A cumulative total of six suspected deaths were recorded, resulting in a case fatality ratio of 9.4%.
    - 70.3% of reported cases have come from Yambia and Tambura counties.
- In addition to the reactive yellow fever vaccination campaign described in the February 2024 Monthly Report, response activities (coordination, surveillance, laboratory, case management, risk communication and community engagement, vaccination, infection prevention and control, etc.) are being reinforced by State Ministry of Health and supported by several partners.
- Preparedness activities are being strengthened in state and counties bordering Tambura and Ibba through guidance from Ministry of Health.[17]
- During the last quarter of 2023 and as of 25 February 2024, a total of eight countries (Cameroon, Chad, Congo, DRC, Guinea, Niger, Nigeria, and South Sudan), have reported active YF transmission with confirmed YF cases. These countries have initiated response planning activities.[16]

- In February 2024, the WHO re-assessed the overall risk at the regional level to moderate based on several contributing factors observed in the region despite efforts to control the spread of yellow fever.[16] These include:
    - Stable number of ongoing outbreaks across the region.
    - Persistence of pockets of unimmunized populations although considerable efforts have been made in recent years to protect the population through PMVC and reactive mass vaccination campaigns (RMVC).
    - Detection of YF confirmed cases in urban areas, such as Douala city in Cameroon, which pose significant risks due to high population density and international travel connections, noting nevertheless the risk mitigation provided by a relatively high average vaccination coverage.
    - Risk of cross-border spread, particularly from the outbreak in South Sudan, which shares borders with neighbouring countries.
    - Limited surveillance and laboratory capacity in certain regions may result in delayed detection, underestimation of the extent of the disease and delayed response.
    - Persisting response challenges with the case classification, investigation, and response operations, exacerbated by competing health emergencies.
    - Competing outbreaks strain the capacity to respond effectively, with various simultaneous health crises, including measles, poliomyelitis, mpox, cholera, diphtheria, hepatitis E, Lassa fever, and dengue. These challenges are compounded by factors such as food insecurity, security constraints, and complex humanitarian contexts. Furthermore, public health and medical personnel are overburdened, managing multiple parallel outbreaks alongside other health emergencies.
    - Socio-economic factors, high levels of poverty and limited resource allocation contribute to the challenge of controlling outbreaks effectively.
- This is an ongoing situation that requires close monitoring given the severity of the disease and limited immunity in the affected region and in GCC countries.

Diphtheria

West Africa

Negligible	Very Low	Low	Moderate	High	Critical

Gulf CDC Risk Assessment of this Event

- **Risk Question:** What is the risk of a significant number of diphtheria cases being imported into the GCC Region in the upcoming 6 months, in terms of likelihood and impact of the importation?
- **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.

Please refer to the GULF CDC Rapid Risk Assessment for further details.

Why is this Notable?

Low vaccine uptake in the 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

4

Countries with recent diphtheria outbreaks that WHO AFRO continues to monitor

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, with over 20,000 cases of infection thus far.

Healthcare capacity	Countries in West Africa experiencing diphtheria outbreaks including Guinea, Chad, Niger, and Nigeria have low immunization rates. All countries experiencing outbreaks have activated proactive response campaigns, details available in the WHO AFRO weekly bulletins.[18]
Connectivity to the Gulf Region	There is overall low connectivity between Chad and Guinea to GCC countries (most connectivity is below 100 passengers per month between the two origin countries and each GCC country, except for Guinea-UAE with 641 forecasted passengers, Chad-UAE with 641 forecasted passengers, and Chad-Saudi Arabia with 194 forecasted passengers). Nigeria continues to be the affected country with highest connectivity to the GCC countries. Despite no cases being reported in March, the outbreak continues to be under monitoring by WHO AFRO.

Situational Highlights for Diphtheria

- There have been no new cases of diphtheria reported in any of the affected countries in March 2024. However, WHO AFRO continues to monitor the diphtheria outbreaks previously recorded in Gabon, Guinea, Niger, and Nigeria.[20]
- Most recently reported cases in the WHO African region:
  - 1,126 confirmed cases in Guinea (19 February 2024)
  - 109 reported cases and 8 deaths in Somalia (16 February 2024)
  - 825 reported cases and 36 deaths in Chad (6 February 2024)
  - 1 reported case and 1 death in Gabon (23 January 2024)
  - 487 reported cases and 1 death in Nigeria (22 January 2024)
- In response to the ongoing outbreak in Nigeria, the US CDC is working in collaboration with the federal government of Nigeria to tackle the burden of zero-dose children (children who were yet to receive any vaccines on the routine immunisation schedule) in the country. Nigeria accounts for the highest burden of zero-dose children globally with 2.3 million zero-dose children, noting that only about 57% of eligible children in Nigeria were fully vaccinated as of 2021.[21]

Acknowledgements

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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, March 2024.