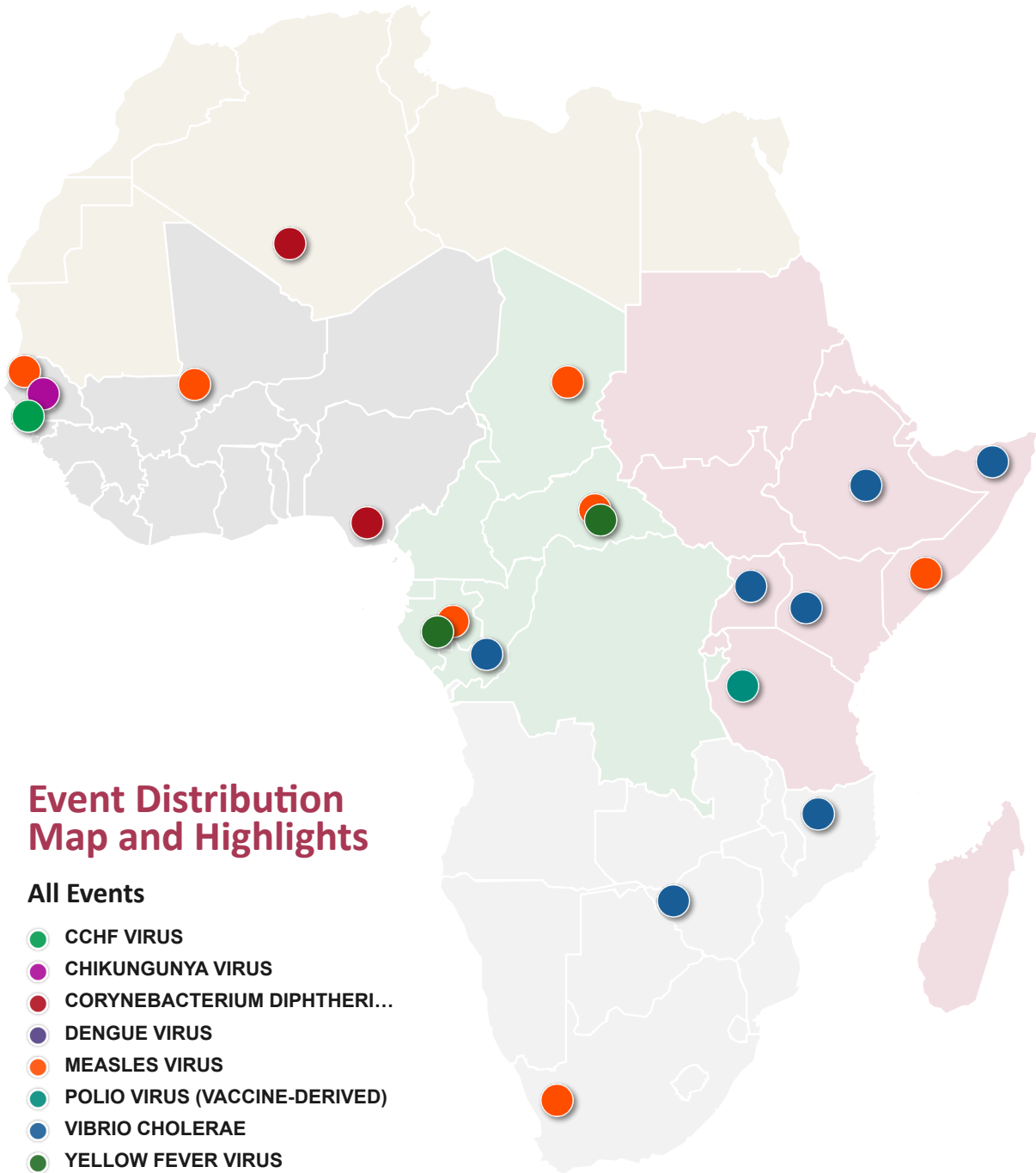


Africa CDC Weekly Event Based Surveillance Report

20-Aug-2023



High Risk Events

Cholera in Africa

83,943 confirmed case(s)
91,857 suspected case(s)
2,760 death(s) (**CFR: 1.6%**)

Agent/Pathogen	Vibrio cholerae	First Reported by Africa CDC	06-Jan-2023	Previous Africa CDC Report:	04-Aug-2023
First Occurred	01-Jan-2023	Country	Africa Combo	Location	17 MS
Source	Ministry of Health	GeoScope	MODERATE	Risk Assessment	HIGH

Update to event:

Since the beginning of this year, 175,800 cases (83,943 confirmed; 91,857 suspected) and 2,760 deaths [case fatality rate (CFR): 1.6%] of cholera were reported from 17 African Union(AU) Member States(MS): Burundi (603 cases; 9 deaths), Cameroon (19,765; 480), Congo (93; 5), DRC (31,342; 230), Eswatini (2; 0), Ethiopia (17,007; 209), Kenya (8,701; 143), Malawi (42,890; 1,260), Mozambique (33,862; 144), Nigeria (2,052; 79), Somalia (12,142; 30), South Africa (1,074; 47), South Sudan (1,471; 2), Tanzania (87; 3), Uganda (73; 9), Zambia (757; 14) and Zimbabwe (3,873; 96). This week, 1,426 new cases and 21 new deaths of cholera were reported from 7 AU MS: Congo, Ethiopia, Kenya, Mozambique, Somalia, Uganda and Zimbabwe.

Congo: Since the last update (7 August 2023), the Ministry of Health (MoH) reported seven new suspected cases and five new deaths of cholera from Niari and Pointe-Noire provinces. This is a 89% decrease compared to last week. Cumulatively, 93 cases (21 confirmed; 72 suspected) and five deaths (CFR: 5.4%) of cholera have been reported from two of ten provinces.

Ethiopia: Since the last update (31 July 2023), the Ethiopia Public Health Institute (EPHI) reported 1015 new suspected cases and 14 new deaths (CFR: 1.4%) of cholera. Cumulatively, 17,007 cases (26 confirmed; 16,981 suspected) and 212 deaths (CFR: 1.2%) have been reported from Ethiopia. The outbreak is active in five of 14 regions in Ethiopia (Amhara, Oromia, Sidama, SNPP and Somali).

Kenya: Since the last update (11 August 2023), the MoH reported 28 new cases (3 confirmed; 25 suspected) and no new deaths of cholera. This is a 53% decrease compared to last week. Cumulatively, 8,701 cases (1,827 confirmed; 6,874 suspected) and 143 deaths (CFR: 1.6%) were reported from 27 of the 47 counties in Kenya. Currently, the outbreak is active in four of the 26 counties (Mandera, Marsabit, Migori and Nairobi). Thirty-three percent of the total cases are children below 10 years.

Mozambique: Since the last update (11 August 2023), the MoH reported 143 new confirmed cases and two new deaths (CFR: 1.4%) of cholera, this is a 9% increase in the number of new cases reported compared to last week. Cumulatively, 33,862 confirmed cases and 144 deaths (CFR: 0.4%) have been reported from 10 of the 11 provinces this year.

Somalia: Since the last update (11 August 2023), the Somali MoH reported 214 new cases (7 confirmed and 207 suspected) and no new deaths of cholera. This is a 5% decrease in the number of new cases compared to the last report. Cumulatively, 12,142 cases (55 confirmed and 12,087 suspected) and 30 deaths (CFR: 0.2%) were reported from 28 of 74 drought-affected districts in the country. Of the total cases reported, 54% are children under five years and 47% are severe. None of the reported cases received the oral cholera vaccine that was administered in the cholera high risk districts. This outbreak has been uninterrupted in the drought-affected districts since 2022 and in the Banadir region since 2017.

Uganda: Since the last update (11 August 2023), the Uganda MoH reported 15 new cases (12 confirmed and 3 suspected) and one new death of cholera from Kayunga and Namayingo districts. Cumulatively, 73 cases (30 confirmed and 43 suspected) and nine deaths (CFR: 12%) of cholera have been reported from: Kayunga (24 confirmed; 20 suspected; 9 deaths) and Namayingo (6; 23; 0) districts.

Zimbabwe: Since the last update (11 August 2023), the MoH reported 19 new cases (4 confirmed; 15 suspected) and no new death of cholera. This is a 62% decrease in the number of new cases reported compared to the last report. Cumulatively, 3,873 cases (858 confirmed; 3,015 suspected) and 96 deaths (CFR: 2.5%) have been reported in 41 districts in all 10 provinces this year.

Response by MS/Partners:

The MoH of affected Member States continues to conduct enhanced surveillance, case management, risk communication, Water, Sanitation, and Hygiene (WASH) interventions and enhance targeted laboratory testing in the affected districts.

CCHF in Senegal

4 confirmed case(s)

1 death(s) (**CFR: 25%**)

Agent/Pathogen	CCHF virus	First Reported by Africa CDC	03-May-2023	Previous Africa CDC Report:	31-May-2023
First Occurred	11-Jul-2023	Country	Senegal	Location	4 health districts
Source	Local SitRep	GeoScope	LOW	Risk Assessment	HIGH

Update to event:

Since the last update (12 July 2023), the MoH reported one new confirmed case and no new deaths of Crimean-Congo hemorrhagic fever (CCHF). The case was a 50- year-old-male who presented to the Koumpentoum health centre with fever, headache, fatigue and bleeding from orifices on 2 August 2023 . On 14 August 2023 blood samples collected were confirmed positive for CCHF by Polymerase Chain Reactive (PCR) and Elisa IgM at the Institut Pasteur, Senegal. The health district of Koumpentoum had previously reported a confirmed CCHF case in February 2022. Cumulatively, four cases and one death (CFR: 25%) of CCHF have been reported from four of 14 regions in Senegal since April 2023: Dakar (1 case; 1 death), Fatick (1; 0) Louga (1; 0) and Yeumbeul (1; 0).

Response by MS/Partners:

The MoH has constituted a multisectoral, multidisciplinary rapid response team to support the response activities.

COVID-19 in Africa

12,314,260 confirmed case(s)
258,500 death(s) (**CFR: 2.1%**)

Agent/Pathogen	SARS-CoV-2	First Reported by Africa CDC	21-Feb-2020	Previous Africa CDC Report:	04-Aug-2023
First Occurred	14-Feb-2020	Country	Africa Combo	Location	All 55 MS
Source	Ministry of Health	GeoScope	VERY HIGH	Risk Assessment	MODERATE

Update to event:

As of 6 p.m. East African Time (EAT) 17 August 2023, a total of 12,314,260 COVID-19 cases and 258,500 deaths (CFR: 2.1%) have been reported by the 55 AU MS. This represents 2% of all cases and 4% of all deaths reported globally. Forty-two (76%) AU MS are reporting CFRs higher than the global CFR. Fifty-three MS have reported COVID-19 cases infected with the Alpha (50 MS), Beta (45), Delta (53), Gamma (5) and Omicron (51) variants of concern (VOC). Additionally, 32 MS have reported the presence of the Omicron BA.2 subvariant, 17 Member States reported the Omicron sub lineage (XBB.1.5), 12 MS reported the Omicron sub lineage (BF.7 or BA.5.2.1.7), and 2 Member States have reported the Omicron sub lineage (XBB.1.16). Another subvariant of Omicron (B.1.1.529) called EG.5 has been detected and reported in Africa, the United Kingdom the United States of America and Europe. As of 11 August 2023, three Member States (Cape Verde, South Africa and Uganda) have reported the presence of this new variant of interest (VOI). Following an initial risk assessment conducted by the [World Health Organization \(WHO\)](#), the public health risk associated with EG.5 is currently rated as low on a global level, similar to the risk of XBB.1.16 and other VOIs.

Fifty-four (98%) MS are currently providing COVID-19 vaccination to the general population. Cumulatively, 1.1 billion doses have been administered on the continent. Of these doses administered, 567.6 million people have been partially vaccinated, and 453.8 million have been fully vaccinated. Eritrea is the only AU MS yet to start COVID-19 vaccination roll out.

For Epi week 32 (7 - 13 August 2023), 126 new COVID-19 cases were reported, which is a 62% increase in the number of new cases reported compared to the previous week (31). The Western region accounted for 67% of the new COVID-19 cases reported this week, followed by the Northern (21%), Eastern (6%), Southern (6%) and no case reported in Central region.

Last week, no new COVID-19 deaths were reported in Africa. More than one thousand new tests were conducted during the past week. The weekly % test positivity increased from 3% to 12% compared to the previous week. Since February 2020, over 127.7 million COVID-19 tests have been conducted in Africa. [Africa CDC COVID-19 vaccine dashboard](#).

Response by MS/Partners:

Response:

The emergency operations center (EOC) of the Africa Centres for Disease Control and Prevention (Africa CDC) has been activated for COVID-19 since 27 January 2020. For more information on Africa CDC's response efforts please refer to Africa CDC's website, [Hotspot dashboard](#), [PGI Dashboard](#), [Vaccination Dashboard](#) and the Africa CDC COVID-19 brief https://au.int/sites/default/files/documents/42763-doc-AfricaCDC_COVIDBrief_5May23_EN.pdf

Measles in Africa

18,529 confirmed case(s)
241,332 suspected case(s)
3,468 death(s) (**CFR: 1.3%**)

Agent/Pathogen	Measles virus	First Reported by Africa CDC	06-Jan-2023	Previous Africa CDC Report:	04-Aug-2023
First Occurred	01-Jan-2023	Country	Africa Combo	Location	24 MS
Source	Ministry of Health	GeoScope	MODERATE	Risk Assessment	MODERATE

Update to event:

Since the beginning of this year, 259,861 cases (18,529 confirmed; 241,332 suspected) and 3,468 deaths (CFR: 1.3%) of measles were reported from 24 AU MS: Angola (6,203 cases; 53 deaths), Botswana (13 cases; 0 deaths), Burundi (319; 0), Cameroon (8,503; 64), CAR (2,419; 0), Chad (8,915; 7), Congo (288; 1), DRC (190,598; 3,187), Ethiopia (13,482; 125), Gabon (2,709; 0) Ghana (212; 0), Kenya (9; 1), Liberia (7,806; 8), Libya (391; 2), Mali (1,548; 0), Mauritania (565; 4), Mozambique (1,342;0), Niger (1,690; 0), Senegal (1,732; 0), Somalia (7,771; 0), South Africa (759; 0), South Sudan (2,001; 14), Uganda (258; 1) and Zambia (328; 1). This week, a total of 2,370 new cases and no new deaths were reported from seven MS: CAR, Chad, Gabon, Mali, Senegal, Somalia and South Africa.

CAR: Since the last report (14 July 2023), the MoH reported 763 cases (505 confirmed, 258 suspected) and no new deaths of measles. Cumulatively, 2,419 cases (1,053 confirmed; 1,366 suspected) and no deaths of measles were reported from all the seven regions in CAR.

Chad: Since the last update (14 July 2023), the MoH reported 110 new confirmed cases and no new deaths of measles. Cumulatively, 8,915 suspected cases and seven deaths (CFR: 0.1%) of measles have been reported from 17 of 23 regions in Chad.

Gabon: Since the last update (11 August 2023), the MoH reported 22 suspected cases and no new deaths of measles from six health regions: Centre (2), Centre-East (2), Libreville-Owendo (8 cases), Maritime (1), Ouest (3) and Sud-Est (6). Currently, 22 health districts are still experiencing an epidemic. Cumulatively, 2,709 cases (1,143 confirmed; 1,566 suspected) and no deaths of measles have been reported from nine of ten regions in Gabon.

Mali: Since the last update (11 August 2023), the MoH reported 2 new confirmed cases and no new deaths of measles. Cumulatively, 1,548 cases (349 confirmed; 1,199 suspected) and no deaths of measles were reported from five of the nine regions in Mali.

Senegal: Since the last update (11 August 2023), the MoH reported 1,287 new cases (448 confirmed; 839 suspected) and no new deaths of measles. This is a 13% increase in the number of new cases compared to the last report. Cumulatively, 1,732 cases (893 confirmed; 839 suspected) and no deaths were reported from Senegal. Of the reported cases, 542 cases are children under five, and 50% were not vaccinated against measles.

Somalia: Since the last update (11 August 2023), the Somalia MoH reported 180 new suspected cases of measles. Cumulatively, 7,771 cases (84 confirmed; 7,687 suspected) and no deaths of measles have been reported from Somalia. The most affected regions include Banadir (2,176), Bay (1,674) and Lower Juba (1,075). Seventy-three percent of the total cases are children under five years.

South Africa: Since the last update (11 August 2023), the National Institute for Communicable Diseases (NICD) reported six new confirmed cases and no new deaths of measles from two provinces: East Cape and KwaZulu-Natal. Cumulatively, 759 confirmed cases and no deaths have been reported from all nine provinces this year. The most affected age groups are 5 - 9 years (43%), 1 - 4 years (24%) and 10 -14 years (20%).

Note: In 2022, 264,345 cases (34,491 confirmed; 229,854 suspected) and 2,860 deaths (CFR: 8%) of measles were reported from 24 MS in four AU regions: Cameroon (3,502 cases; 21 deaths), Central African Republic (CAR) (1,447; 3), Chad (2,956; 11), Congo (6,873; 132), Democratic Republic of Congo (DRC) (146,359; 1,846), Ethiopia (9,857; 102), Guinea (23,601; 33), Kenya (406; 2), Liberia (16,130; 86), Mali (2,745; 1), Mozambique (45; 0), Namibia (23; 0), Niger (19,524; 32), Nigeria (1,162; 0), Senegal (373; 1), Sierra Leone (814; 0), Somalia (16,624; 0), South Africa (365; 0), South Sudan (3,942; 38), Sudan (1,188; 13), Tanzania (223; 0), Togo (1,272; 0), Zambia (23; 3), Zambia (23; 3) and Zimbabwe (6,444; 698).

Response by MS/Partners:

The health agencies of the affected AU MS are strengthening surveillance and laboratory testing to improve early detection and response. AU MS have also intensified risk communication and vaccination campaigns in affected areas.

Polio (vacc) in Africa

147 confirmed case(s)
0 death(s) (**CFR: 0%**)

Agent/Pathogen	Polio virus (vaccine-	First Reported by Africa CDC	01-Jan-2023	Previous Africa CDC Report:	21-Jul-2023
First Occurred	01-Jan-2023	Country	Africa Combo	Location	15 MS
Source	Global Polio Eradication	GeoScope	MODERATE	Risk Assessment	MODERATE

Update to event:

Since the last report (10 August 2023), the continent has reported 44 cases of circulating vaccine-derived poliovirus type 1 (cVDPV1) from DRC (28 cases), Madagascar (13), Mozambique (3) and 103 cases of circulating vaccine-derived poliovirus type 2 (cVDPV2) from 13 MS: Benin (3 cases), Burkina Faso (1), Burundi (3), CAR (10), Chad (10), Côte d'ivoire (2), DRC (44), Kenya (3), Mali (2), Nigeria (21), Niger (1), Somalia (2) and Zambia (1). This week, one new cases and no new deaths of cVDPV2 was reported from DRC.

DRC: Since the last update (30 June 2023), the MoH has reported one new confirmed cases and no new deaths of cVDPV2 from kinshasa. Cumulatively, 72 cases (28 circulating vaccine-derived poliovirus type 1 (cVDPV1); 44 cVDPV2 cases) have been reported from DRC in 2023. There were 146 and 364 cases of cVDPV1 and cVDPV2 respectively reported in 2022.

Response by MS/Partners:

The MoH recently conducted a large-scale mass polio vaccination campaign targeting children under 5 years in 20 provinces.

Yellow fever in Africa

27 confirmed case(s)

312 suspected case(s)

7 death(s) (**CFR: 25.9%**)

Agent/Pathogen	Yellow fever virus	First Reported by Africa CDC	06-Jan-2023	Previous Africa CDC Report:	04-Aug-2023
First Occurred	01-Jan-2023	Country	Africa Combo	Location	4 MS
Source	Ministry of Health	GeoScope	MODERATE	Risk Assessment	MODERATE

Update to event:

Since the beginning of 2023, a total of 339 cases (27 confirmed; 312 suspected) and seven deaths (CFR: 25.9%) of yellow fever have been reported in four AU MS: Cameroon (25 cases; 3 deaths), CAR (238; 4), Gabon (64; 0) and Uganda (12; 0). This week, 41 new cases and no new deaths of yellow fever were reported from CAR and Gabon.

CAR: Since the last report (11 August 2023), the MoH reported 38 new suspected cases and no new death of yellow fever from all seven regions of the country. Cumulatively, 238 suspected cases and four deaths of yellow fever have been reported in all seven regions.

Gabon: Since the last report (8 August 2023), the MoH reported three new suspected cases of yellow fever from three regions: Centre-Sud (1 suspected case), Center (1) and Nord (1). The cases presented with fever, jaundice, and fatigue at various health facilities. Cumulatively, 64 suspected cases and no deaths of yellow fever have been reported from three regions in Gabon. The last outbreak of yellow fever in Gabon occurred in 2021 where one confirmed case and no deaths were reported from Ogooué Maritime province. As of 2021, the yellow fever national vaccination coverage was 64%, which is below the WHO target of 85% of above.

Response by MS/Partners:

CAR: The MoH developed a yellow fever response plan and continues to conduct yellow fever vaccination campaigns in affected regions.

Gabon: The MoH in collaboration with partners is planning to conduct a mass yellow fever vaccination campaign targeting affected regions.

Dengue fever in Africa

2,498 confirmed case(s)
15,666 suspected case(s)
51 death(s) (**CFR: 2%**)

Agent/Pathogen	Dengue virus	First Reported by Africa CDC	26-Jul-2023	Previous Africa CDC Report:	28-Jul-2023
First Occurred	02-Jan-2023	Country	Africa Combo	Location	8 MS
Source	Other	GeoScope	LOW	Risk Assessment	MODERATE

Update to event:

Since January 2023, a total of 18,164 cases (2,498 confirmed; 15,666 suspected) and 51 deaths (CFR: 2%) of dengue fever have been reported in seven African Union Member States (MS): Angola (3 cases; 0 deaths), Côte d'Ivoire (107 ; 0), Egypt (578; 0), Ethiopia (9,768; 4), Mauritius (222; 0), Sao Tome and Principe (1,223; 11), Senegal (42; 0) and Sudan (6,202 ; 36). This week, 2,860 new cases and 11 new deaths of dengue fever were reported from Ethiopia, Mauritius and Sao Tome and Principe.

Egypt: Since the last update (21 July 2023), the MoH reported 378 new cases (31 confirmed; 47 probable; 300 suspected) and no new deaths of dengue fever. Cumulatively, 578 cases (31 confirmed; 247 probable; 300 suspected) and no deaths have been reported from Egypt.

Ethiopia: Since the last update (14 July 2023), the Ethiopian Public Health Institute (EPHI) reported 2857 new cases (28 confirmed; 2829 suspected) and no new deaths of dengue fever. Cumulatively, 9,768 cases (92 confirmed; 9,676 suspected) and four deaths (CFR: 4.3%) have been reported from seven Woredas of Afar Region and five villages in Dire Dewa City administration. Majority (92%) of the cases were reported from Afar region.

Mauritius: Since the last update (11 August 2023), the Ministry of Health and Wellness, Communicable Disease Control Unit of Mauritius reported 11 new confirmed cases and no new deaths of dengue fever from the island of Mauritius. Cumulatively, 241 confirmed cases (236 local; 5 imported) and no deaths have been reported from two islands: Mauritius (178 local; 5 imported cases) and Rodrigues (58 local cases). Currently, there are three active cases of dengue fever in the island of Mauritius.

Sao Tome and Principe: Since the last report (7 May 2023), the MoH reported 11 new deaths of dengue fever from Agua Grande district in Sao Tome and Principe (STP). Cumulatively, 1,223 confirmed cases and 11 deaths (CFR:0.9%) of dengue fever have been reported from all seven districts of Sao Tome and Principe (STP).

Response by MS/Partners:

Egypt: The MoH continues to enhance surveillance, strengthen laboratory capacity, vector control measures and daily monitoring. In addition, the MoH continues to raise awareness and community engagement

Ethiopia: The EPHI activated the regional EOC to coordinate the response and continues to conduct enhanced surveillance, risk communication and case management at designated treatment centers. In addition, vector control activities are ongoing in the affected regions.

Mauritius: The Ministry of Health and Wellness has implemented a number of public health measures to mitigate the outbreak, including enhanced surveillance, strengthened laboratory capacity, vector control measures and daily monitoring. A multi-sectoral committee on dengue fever has also been constituted.

Sao Tome and Principe: The MoH deployed a rapid response team to conduct outbreak investigation, active case search and risk communication.

Diphtheria in Africa

2,503 confirmed case(s)
5,653 suspected case(s)
210 death(s) (**CFR: 8.4%**)

Agent/Pathogen	Corynebacterium diphtheriae	First Reported by Africa CDC	18-Aug-2023	Previous Africa CDC Report:	18-Aug-2023
First Occurred	01-Aug-2023	Country	Africa Combo	Location	Multiple countries
Source	Ministry of Health	GeoScope	MODERATE	Risk Assessment	MODERATE

Update to event:

Since January 2023, a total of 8,156 cases (2,503 confirmed; 5,653 suspected) and 210 deaths (CFR: 8.4%) of diphtheria have been reported in three African Union Member States (MS): Algeria: (80 cases, 10 deaths), Guinea (63; 10), and Nigeria (8,013; 190). This week, 78 new cases (12 confirmed; 66 suspected) and 12 new deaths of diphtheria were reported from Algeria and Nigeria.

Algeria: Since the last report (7 July 2023), the MoH reported 10 new deaths of diphtheria from the Southern city of Tamanrasset city. Cumulatively, 80 cases (16 confirmed; 64 suspected) and 10 deaths (CFR: 62.5%) were reported from southern city of Tamanrasset in Algeria.

Nigeria: Since the last update (17 of August 2023), the Nigerian Centre for Disease Control (NCDC) reported 78 cases (12 confirmed; 66 suspected) and two new deaths (CFR: 16.7%) of diphtheria from five states: Borno, Bauchi, Kaduna, Sokoto and Katsina. This is an 11% decrease in the number of new cases compared to the last report. Cumulatively, 5,529 (2,484 confirmed and 3,045 suspected) cases with 190 deaths (CFR: 7.6% of diphtheria have been reported from 28 of the 36 states in Nigeria. Children between 1 -14 years accounted for 69.7% of cases, 20.5% of whom are fully vaccinated.

Response by MS/Partners:

Algeria: The MoH deployed a rapid response team (RRT) to the affected area to conduct case investigation, case management, contact tracing, risk communication and mass vaccination of the affected community. According to media reports, a crisis response unit has been set up and over 10,000 foreigners have been vaccinated against Diphtheria.

Nigeria: The NCDC continues to conduct active case search, case management and risk communication to affected states.

Chikungunya in Senegal

8 confirmed case(s)
0 death(s) (**CFR: 0%**)

Agent/Pathogen	Chikungunya virus	First Reported by Africa CDC	23-Jun-2023	Previous Africa CDC Report:	23-Jun-2023
First Occurred	29-May-2023	Country	Senegal	Location	6 health districts
Source	Ministry of Health	GeoScope	LOW	Risk Assessment	MODERATE

Update to event:

Since the last update (24 June 2023), the MoH reported four new confirmed cases and no new deaths of chikungunya from two health districts: Kedougou (1 case) and Saraya (3). The samples were all confirmed positive for chikungunya by polymerase chain reaction (PCR) and ELISA at the Institut Pasteur in Dakar, Senegal. The cases were reported to have developed symptoms such as fever, headaches, diarrhea, and chills. Cumulatively, eight cases and no deaths of chikungunya have been reported from six of 79 health districts in Senegal: Dioffior(1 case), Kebemer (1), Kedougou (1), Pikine (1), Saraya (3) and Sokone (1).

Response by MS/Partners:

The MoH has deployed a multidisciplinary national team to affected districts to support the response

Footnotes:

* Cases in this report include confirmed, probable and suspected cases

* Case fatality rates are calculated using confirmed cases and deaths only, except for the following:

- Bacterial meningitis, cholera and measles where CFR is calculated using all cases and deaths

* The GeoScope level is determined by where the event is currently occurring on the continent. Low: event is limited to sub-national areas within one MS; Moderate: Event is affecting multiple countries within an AU region, or have been imported from/exported to 1-2 countries from another global region; High: Event is affecting several multinational AU regions, or have been imported from/exported to >2 countries from another global region; Very high: Event is considered a pandemic, affecting multiple continents or worldwide. The risk level is determined by evaluating the following criteria: morbidity and mortality of the disease, probability to spread within and to the other MSs, and availability of effective treatments, vaccines, or other control measures. An event risk level can be classified as low, moderate, high and very high depending on how they score on the above criteria.