

WEEKLY BULLETIN ON OUTBREAKS AND OTHER EMERGENCIES

Week 49: 2 - 9 December 2017
Data as reported by 17:00; 9 December 2017



3

New events

47

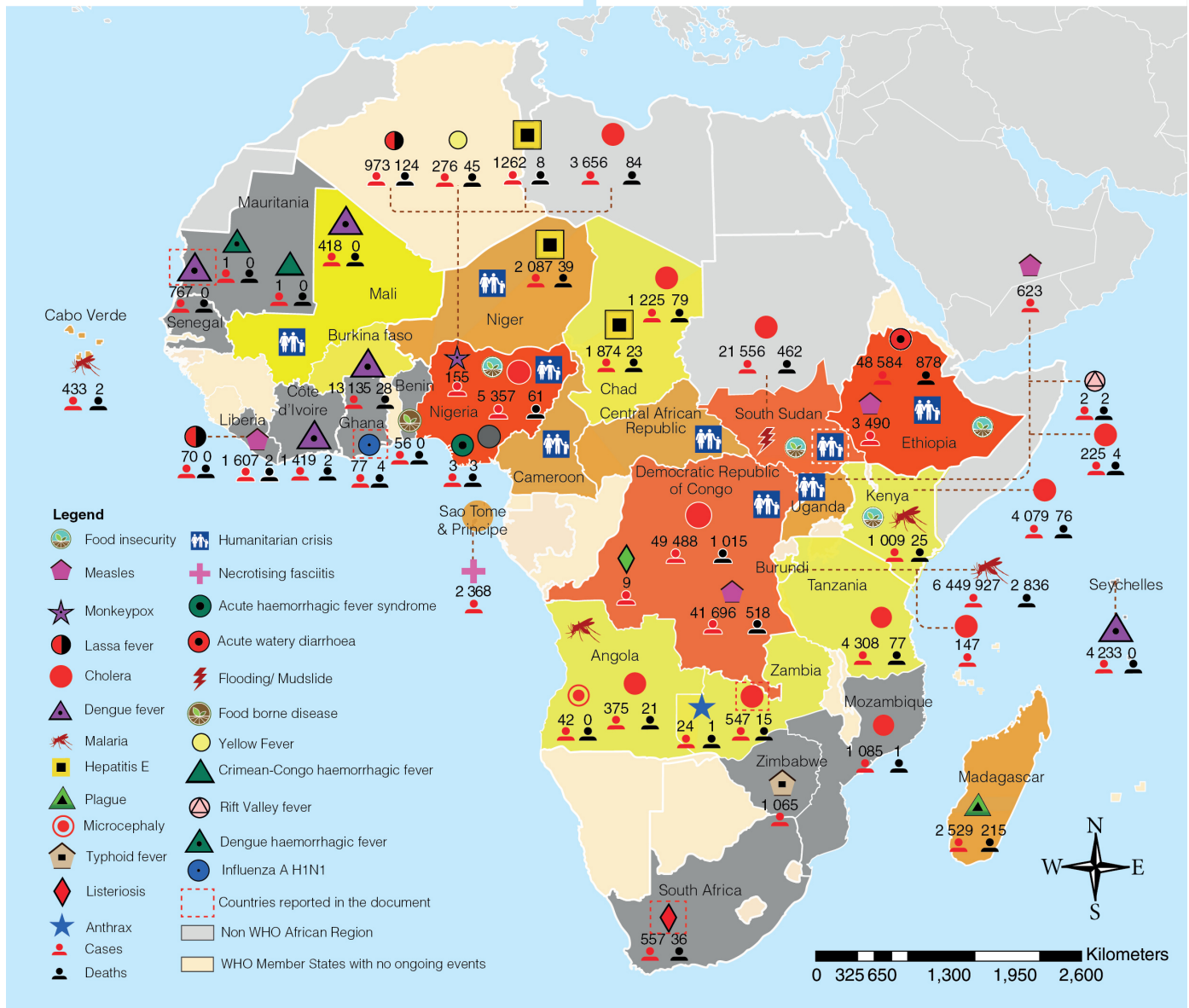
Ongoing events

42

Outbreaks

8

Humanitarian crises



2

Grade 3 events

7

Grade 2 events

8

Grade 1 events

30

Ungraded events

2

Protracted 3 events

0

Protracted 2 events

1

Protracted 1 event

Overview

Contents

- 1 Overview
- 2 Declaration
- 3 - 4 New events
- 5 - 7 Ongoing events
- 8 Summary of major challenges and proposed actions
- 9 All events currently being monitored

- This Weekly Bulletin focuses on selected acute public health emergencies occurring in the WHO African Region. The WHO Health Emergencies Programme is currently monitoring 50 events in the region. This week's edition covers key new and ongoing events, including:
 - Declaration of end of Marburg virus disease outbreak in Uganda
 - Influenza A H1N1 in Ghana
 - Listeriosis in South Africa
 - Cholera in Zambia
 - Dengue fever in Senegal
 - Humanitarian crisis in South Sudan.
- For each of these events, a brief description followed by public health measures implemented and an interpretation of the situation is provided.
- A table is provided at the end of the bulletin with information on all new and ongoing public health events currently being monitored in the region, as well as events that have recently been closed.
- **Major challenges include:**
 - The outbreak of listeriosis in South Africa has been insidious and is widespread, affecting all provinces in the country. This event requires meticulous investigations to identify the source of infection.
 - The humanitarian crisis in South Sudan has remained serious, with deteriorating wellbeing of the population. This complex emergency requires concerted efforts by the international community to address the root cause of the conflict and alleviate the suffering of the people.

Declaration of end of Marburg virus disease outbreak in Uganda

4 Cases : 3 Deaths : 75% CFR

EVENT DESCRIPTION

On 8 December 2017, the Uganda Ministry of Health declared the end of the Marburg virus disease (MVD) outbreak in the country. The declaration came 42 days (two 21-day incubation cycles of Marburg virus) since the last confirmed case died on 26 October 2017. During the outbreak, four cases (three confirmed and one probable) were reported from Kapchorwa and Kween Districts. Three of the four cases died, giving a case fatality rate of 75%. These cases were epidemiologically linked and all belonged to the same family. A total of 316 close contacts of the patients were listed and followed up in Uganda and Kenya (one of the confirmed cases visited Kenya before his death). The first 21-day cycle ended on 16 November 2017 and the second 21-day cycle of enhanced surveillance ended on 7 December 2017, with no new cases reported. In Kenya, the close contacts completed 21-day follow up on 13 November 2017.

The MVD outbreak was notified to WHO on 17 October 2017 and officially declared by the Ministry of Health on 19 October 2017. The response to the Marburg virus disease outbreak was led by health authorities in Uganda and Kenya, in coordination with WHO. The other partners who supported the response include the Global Outbreak Alert and Response Network (GOARN), the US Centers for Disease Control and Prevention (CDC), the African Field Epidemiology Network (AFENET), UNICEF, Médecins Sans Frontières (MSF), the International Federation of Red Cross and Red Crescent Societies (IFRC), the International Committee of the Red Cross (ICRC), the Uganda Red Cross Society, the European Union Commission's Civil Protection Mechanism and the Emergency Response Coordination Centre (ECHO-ERCC), the Bernhard Nocht Institute for Tropical Medicine and Marburg University in Germany, the European Union Mobile Lab Consortium and the Alliance for International Medical Action (ALIMA), the Uganda Virus Research Institute (UVRI), the Joint Mobile Emerging Diseases Intervention Clinical Capability (JMEDICC), the Infectious Diseases Institute of Makerere University (IDI), the Kenya Red Cross Society, and the Kenya Medical Research Institute (KEMRI).

PUBLIC HEALTH ACTIONS

- ▶ On 8 December 2017, the Uganda Minister of Health and the WHO Representative held a joint press conference in Kampala to declare the end of the MVD outbreak.
- ▶ WHO issued a news release on 8 December 2017 to declare the end of MVD outbreak in Uganda.
- ▶ Efforts to strengthen disease surveillance and preparedness and response capacity are ongoing. WHO supported training of national and district rapid response teams. In addition, the village health teams in the sub-region have been trained on community-based disease surveillance.

SITUATION INTERPRETATION

The national authorities in Uganda, in collaboration with WHO and partners, have effectively contained the MVD outbreak. The response to this outbreak demonstrates the importance of early detection and rapid response, community engagement and strong coordination, as essential conditions for outbreak control. WHO will continue to support health authorities in both Uganda and Kenya to upgrade disease surveillance and response capabilities, as well as infection prevention and control measures and case management.

New events

Influenza A H1N1

Ghana

77
Cases

4
Deaths

5.2%
CFR

EVENT DESCRIPTION

On 6 December 2017, the Ghana Ministry of Health notified WHO of a focal outbreak of influenza A H1N1 in a school in Kumasi City, Ashanti Region. The event was detected on 30 November 2017 when a cluster of 13 cases of severe acute respiratory illness was reported from Kumasi Academy Senior High School. The initial cases developed illness on 29 November 2017 and three deaths were reported by 1 December 2017. The case-patients presented with fever, cough, headache, joint and body pains, and abnormal chest auscultation. As of 9 December 2017, 77 cases with four deaths (case fatality rate 5.2%) have been reported. The majority of the cases, 66%, were males and over 95% of the cases are teenagers. Thus far, the disease is still localized in the school as no cases have been reported among community members.

Laboratory specimens, including blood, cerebrospinal fluid and throat swabs were collected from the case-patients and sent to Noguchi Memorial Institute for Medical Research (NMIMR), Kumasi Centre for Collaborative Research (KCCR) and other public health laboratories. Test results from NMIMR (a National Influenza Centre) released on 6 December 2017 indicated that 12 out of 19 throat swabs were positive for influenza A H1N1 2009 pandemic strain using polymerase chain reaction. Corroborative test results from KCCR released on 7 December 2017 showed that seven out of 25 nasal and throat swabs were positive for influenza type A using quantitative real time polymerase chain reaction (rt-PCR).

Twenty-six blood specimens tested negative for Ebola and Marburg virus diseases, Lassa fever, yellow fever, dengue, chikungunya, and Zika virus. Specimens analyzed in other public health and research laboratories were negative for meningitis and encephalitis. Accordingly, the Ministry of Health has declared an outbreak of influenza A H1N1 pandemic strain as further epidemiological investigations are ongoing.

Kumasi Academy High School is a mixed sex school with total population of 3 010 (2 814 students including 541 day students, 127 teaching staff and 73 non-teaching staff).

Geographical distribution of influenza A H1N1 cases in Ghana, 29 November - 9 December 2017



PUBLIC HEALTH ACTIONS

- ▶ The Minister of Health and the WHO Representative held a press briefing to inform the public and provide updates on the outbreak.
- ▶ The Ministry of Health deployed a multi-disciplinary rapid response team to Kumasi to conduct the outbreak investigation and support response actions. WHO provided technical and logistical support to the investigation mission.
- ▶ Active surveillance has been enhanced: a case definition was developed and active case search is being done among students and staff at the school and four healthcare facilities that treated the ill students. Suspected cases are being line listed.
- ▶ Four hospitals in Kumasi have been designated as isolation and treatment centres. Doctors have been assigned to the school Sick Bay to provide high level pre-referral care to students.
- ▶ Public health education and community sensitization are ongoing. The Public Health Directorate has granted media interviews to provide updates on the outbreak and actions being taken. Simple messages on infection prevention and control have been developed for education at the school.

SITUATION INTERPRETATION

The influenza A H1N1 virus that caused the 2009 pandemic is now a regular human influenza virus circulating seasonally worldwide. However, seasonal influenza spreads easily, with rapid transmission in crowded areas including schools. This is the case for the event in Kumasi, Ghana. When an infected person coughs or sneezes, droplets containing viruses (infectious droplets) are dispersed into the air and are spread to persons in close proximity who breathe these droplets in. The virus can also be spread by contamination of hands with influenza viruses, which are then deposited on fomites.

Ghana has a good influenza preparedness system. The National Influenza Centre at NMIMR is part of the Global Influenza Surveillance Network (GISN), coordinated by WHO since 1996. Furthermore, the country is benefiting from the Pandemic Influenza Preparedness (PIP) Framework for determination of influenza burden of disease. The PIP Framework facilitates sharing of influenza viruses and access to vaccines and other benefits to improve global pandemic influenza preparedness and response. These capabilities enhanced the ability to detect the current outbreak in real time and initiate containment measures. Going forward, it is necessary to remain vigilant and continue active epidemiologic and laboratory surveillance for early detection of further transmission of the virus in the community.

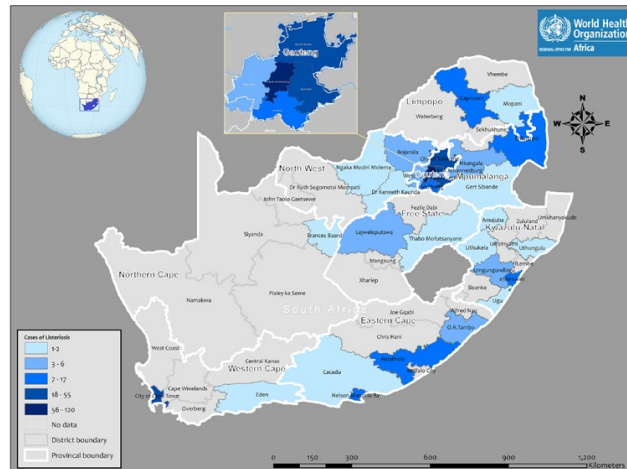
EVENT DESCRIPTION

On 6 December 2017, the South African National Department of Health notified WHO of a listeriosis outbreak in the country. The outbreak was detected in October 2017 when increasing cases of the disease were noticed. Retrospective epidemiologic investigations established that cases of listeriosis had been detected since the beginning of 2017, with gradually increasing incidence.

As of 29 November 2017, a total 557 confirmed cases, with 36 deaths (case fatality rate 6.5%), have been reported from all nine provinces in the country. The majority of the reported cases (345, 62%) originated from Gauteng Province (where Johannesburg and Pretoria are located), followed by Western Cape (71, 13%) and KwaZulu-Natal (37, 7%). In 540 cases with known age, the ages range from birth to 93 years, with a median of 26 years. Neonates aged 28 days or younger accounted for 37% of cases. Among the neonates, 96% had early-onset disease (from birth to less than 6 days). Females account for 53% of cases (286/538).

Of the 577 confirmed cases, *Listeria monocytogenes* was isolated from 386 (69%) blood culture and 146 (26%) cerebrospinal fluid (CSF) specimens. As of 29 November 2017, whole genome sequencing was performed on 189 *L. monocytogenes* isolates. Fifteen sequence types (STs) have been identified, with 71% (134/189) belonging to ST6. Isolates in this ST6 cluster are very closely related, showing fewer than 20 single nucleotide polymorphism (SNP) differences, suggesting that most cases in this outbreak have had exposure to a widely available, common food type/source. Limited food consumption history data are available and indicate that a wide variety of food items documented to have caused previous outbreaks/clusters of listeriosis (including dairy, meat, vegetables, fruit, and ready-to-eat products) were commonly consumed, and no specific food item/s or food consumption patterns that could guide targeted environmental investigations have yet been identified.

Geographical distribution of listeriosis cases in South Africa, 1 January - 29 November 2017

**PUBLIC HEALTH ACTIONS**

- The National Health Laboratory Service (NHLS) established a line list database of listeriosis cases, being updated daily with data from Central Data Warehouse (CDW) downloads as well as direct reports of listeriosis cases from private sector laboratories.
- Case investigation forms are being completed by numerous healthcare workers in the public and private sectors, including surveillance officers at enhanced surveillance site hospitals (public sector), clinical microbiologists (public sector), infection control and prevention (IPC) practitioners at private sector hospitals, and Department of Health officials. Data from these forms are entered into the database.
- A team of National Institute for Communicable Disease (NICD) epidemiologists has compiled a comprehensive food item checklist and is conducting in-depth interviews of case-patients in Gauteng Province to obtain detailed food consumption histories. To date, five such interviews have been conducted.
- Clinical listeriosis management guidelines have been drafted and are currently under review.
- Private and public sector laboratories are submitting clinical isolates to the NICD Centre for Enteric Diseases (CED) and whole genome sequencing is being performed on all clinical isolates and selected food/environmental isolates.
- The Director General of the National Department of Health (NDOH) has requested food industry stakeholders to submit *Listeria* isolates to the NICD, along with details of *Listeria*-positive food/food processing environmental samples. Environmental health practitioners are visiting homes of those diagnosed with listeriosis to take food samples from their refrigerators.
- The NICD has provided information about listeriosis, including Frequently Asked Questions, clinical management guidance, and laboratory testing methodology on their web site and the Food Control Division within the NDOH has distributed information about the outbreak to food industry stakeholders.

SITUATION INTERPRETATION

Listeriosis is a potentially serious bacterial infection that contaminates food and is particularly dangerous to pregnant women, causing premature labour and stillbirth, and neonatal meningitis. Milder forms result in gastroenteritis, which can be severe in those who are immunocompromised. The first documented reports of outbreaks in South Africa were in 1977 (14 cases) and 2015 (seven cases), and since then sporadic cases have occurred throughout the country. However, since October 2017, the Department of Health has seen a marked increase in the number of cases. This increase and the associated deaths are worrying, particularly in the face of South Africa's high prevalence of HIV infection. The current flooding in Gauteng Province and recently in KwaZulu-Natal, and the severe drought in the Western Cape, may well exacerbate the situation, with associated problems with safe food storage and general hygiene. Street food vendors are common across South Africa and poorly regulated and many people lack access to electricity and thus refrigeration. Authorities need to act swiftly and efficiently to prevent the outbreak from spreading further.

Ongoing events

Cholera

Zambia

547
Cases

15
Deaths

2.7%
CFR

EVENT DESCRIPTION

The flare up of the cholera outbreak in Zambia continues. Since our last update on 1 December 2017 (Weekly Bulletin 48), a total of 158 new suspected cholera cases, including five deaths (case fatality rate 3.2%), have been reported. Since the beginning of the outbreak on 28 October 2017, a cumulative total of 547 cases and 15 deaths (case fatality rate 2.7%) have been reported across the country, as of 7 December 2017. By 7 December 2017, 62 case-patients were receiving treatment in four cholera treatment centres (Chipata, Kanyama, Matero and Bauleni). The most affected age group is children under 5 years of age, accounting for 33% of the reported cases.

A total of 282 samples were tested using rapid diagnostic tests, of which 230 were positive for cholera. Of 310 samples cultured, 53 were positive for *Vibrio cholerae* O1 Ogawa (48 from Chipata, four from Kanyama and one from Bauleni). Water quality monitoring is ongoing in all sub-districts, with intensified activity in Kanyama, Matero and Chipata. The results available to date indicate that nearly 42% of water sources are contaminated with either faecal coliforms or *Escherichia coli*.

The outbreak initially started in Chipata sub-district and spread to Kanyama sub-district. As of 7 December 2017, 19 townships in six sub-districts, namely Chipata, Kanyama, Chawama, Matero, Chilenje, and Chelston, have been affected.

PUBLIC HEALTH ACTIONS

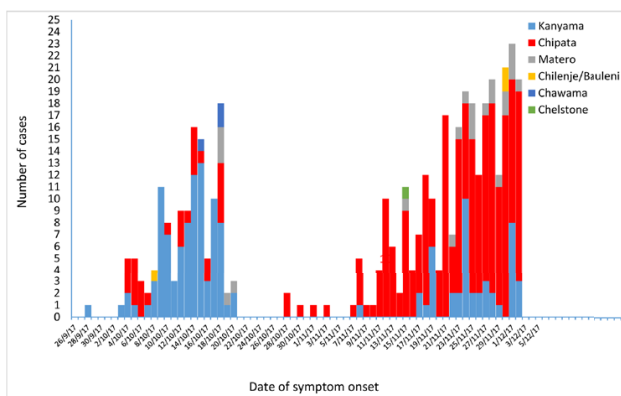
- ▶ The Ministry of Health is collaborating with WHO and other partners to control the outbreak. Six local incident command posts are currently operational in Chawama, Chipata, Kanyama, Matero, Chelstone, and Chilenje, each led by an Incident Commander who is a Public Health Specialist.
- ▶ Five cholera treatment centres have been established in Chawama, Chipata, Kanyama, Matero and Bauleni sub-districts to manage cases. So far 441 cases have been successfully treated and discharged.
- ▶ Cholera outbreak guidelines and standard operating procedures have been updated and shared with health workers.
- ▶ The health facilities in Lusaka District have continued with active surveillance, health education, chlorine distribution, contact tracing and environmental health monitoring.
- ▶ The Ministry of Health has closed contaminated water points and has implemented water, sanitation and hygiene (WASH) interventions to improve water supplies in affected areas. This includes provision of household chlorine, disinfection of pit latrines, erection of water tanks, installation of water purifiers, and intensification of water quality monitoring.
- ▶ The Lusaka City Council has intensified collection of garbage and emptying of septic tanks in Kanyama and Chipata as priority areas.

SITUATION INTERPRETATION

Zambia is experiencing a resurgence of a cholera outbreak, with new areas being affected. The outbreak is mainly affecting peri-urban areas of Lusaka, and transmission has been linked to contaminated water supplies, inadequate sanitation and poor hygiene practices. The situation is likely to worsen with the ongoing rainy season, resulting in further contamination of water sources. Zambia hosts approximately 60 000 refugees from neighbouring countries. The influx of refugees has led to overcrowded settlements with high needs for shelter, healthcare and water and sanitation facilities. Most refugees are in poor health, especially children.

While the country has ample experience and capacity to respond to cholera outbreaks, the current response is being challenged by inadequate logistics and supplies, including chlorine tablets, RDTs and water quality testing kits. The national authorities and partners need to mobilize the required resources.

Cholera epidemic curve by sub-district in Zambia, 28 October - 3 December 2017



EVENT DESCRIPTION

The outbreak of dengue fever in Senegal, which originated in the north-western Louga Region, has spread to three other regions of the country. Four cases have been reported from Fatick (2), Thiès (1) and Dakar (1) Regions. Nonetheless, the overall disease trend is declining. Since the beginning of the outbreak on 28 September 2017, a cumulative total of 767 suspected cases have been reported, as of 3 December 2017. A total of 132 cases have been confirmed at the Institut Pasteur Dakar by polymerase chain reaction (PCR) and serological testing. To date, analyses of samples from confirmed cases have shown only dengue virus serotype 1 (DENV-1) circulating. No severe cases and no deaths have been reported.

Ninety-seven percent of cases have been reported from the Louga Region. All cases with the exception of the Dakar case were detected via surveillance at health facilities; the Dakar case was detected via diagnostic testing at a private hospital.

Environmental investigation in the Louga Region identified multiple sites suitable for mosquito breeding, including uncovered water drums, flowers pots, backyard orchards, and banana plantations. An investigation of the case reported in Dakar also identified uncovered water buckets used to collect drainage from air conditioning units, which could also serve as mosquito breeding sites. Further epidemiological, entomological and environmental investigations are ongoing and the findings will be communicated.

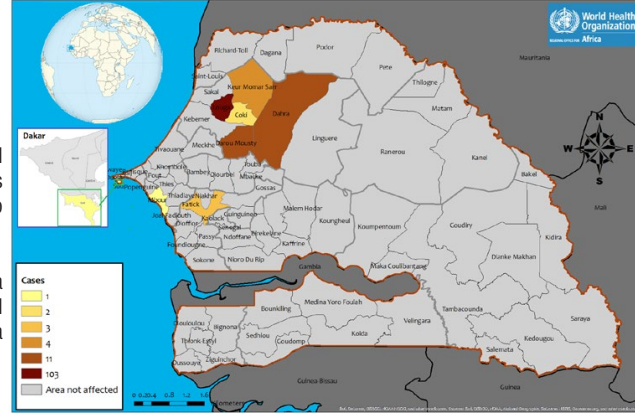
PUBLIC HEALTH ACTION

- ▶ The Emergency Operations Centre of the Ministry of Health has been activated to coordinate response to the outbreak.
- ▶ Vector control interventions have been conducted in the Louga Region and the households and environs of confirmed cases have been sprayed to reduce vector density.
- ▶ The Ministry of Health has issued multiple press releases regarding the event.
- ▶ Health facilities have been provided with the case management guidelines.
- ▶ Mass communication led by the Ministry of Health through radio and television is ongoing.
- ▶ The regional governments of Fatick, Thiès, and Dakar have recommended strengthening of surveillance activities, community sensitization, and other measures to decrease vector density and support appropriate management of dengue cases.

SITUATION INTERPRETATION

Although the decreasing trend in the incidence of dengue fever cases is encouraging, the expansion of the outbreak to new regions gives cause for concern, both nationally and at the regional level. Because case finding continues to rely primarily on surveillance in health facilities, it is likely that the true magnitude of this outbreak is underestimated, given the fact that most infections are mild. Additional measures including enhanced surveillance, destruction of mosquito breeding sites and insecticide spraying need to be reinforced in order to control this outbreak. Training of healthcare workers in dengue fever case management should be carried out to provide appropriate care to dengue fever cases.

Geographical distribution of dengue fever cases in Senegal,
28 September - 3 December 2017



EVENT DESCRIPTION

The conflict-driven humanitarian emergency in South Sudan continues to worsen, with 7.5 million people in need of assistance. There are an estimated 1.9 million internally displaced people, 210 000 living in Protection of Civilians (PoC) sites, 2.1 million South Sudanese refugees in neighbouring countries and 279 000 refugees from neighbouring countries in South Sudan. Armed conflict continues in Greater Equatoria, Greater Upper Nile and Greater Bahr el Ghazal States, resulting in further population movement and limited access by humanitarian actors.

On 28 November 2017, an attack in Duk Payuel by cattle raiders left over 50 people dead, scores wounded and about 60 abducted; houses were burnt and cattle stolen. The casualties with major injuries, including aid workers, were evacuated to Juba. The attack resulted in over 2 000 people fleeing to Poktap (10 km away), which has few resources to cope up with the extra load of people.

In the last four weeks (45 to 48 of 2017), active cholera transmission continues in Juba and Budi Counties. In week 48 (week ending 3 December 2017) 15 new suspected cases (12 from Juba and 3 from Budi) were reported. The hotspot is in New Bongo District of Juba County, where at least 49 cases (including 16 confirmed) were reported since 10 November 2017. Nonetheless, the trend is declining following initiation of a comprehensive response, including reactive oral cholera vaccination.

Malnutrition is on the rise and rates of global acute malnutrition (GAM) have surpassed extreme levels in most assessed areas. As of September 2017, 6 million people were severely food insecure, with 40 000 in humanitarian catastrophe. The current harvest season, between October and December 2017, may reduce the numbers of food insecure to 4.8 million, but a poor harvest also brings a risk of famine in many locations. In 2018, 1.1 million children under 5 are expected to be malnourished.

PUBLIC HEALTH ACTIONS

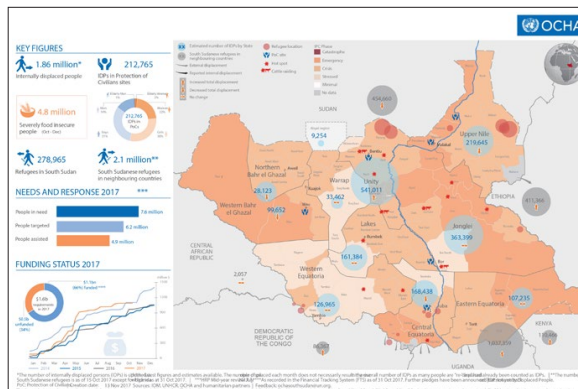
- ▶ WHO and health cluster partners have produced a draft humanitarian needs overview for 2018.
- ▶ WHO supported the Ministry of Health to train 40 national multisectoral rapid response teams to ensure rapid response to any crisis. The participants come from all the 10 national hubs in the country.
- ▶ On 23 November 2017, an inter-agency mission to Morobo town, Central Equatoria provided vaccination to children under age 5, medication and vaccines, screening of ill people and kits and mosquito nets to pregnant and lactating women. Nutrition partners screened children under 5 years and the water, sanitation and hygiene (WASH) partners provided parts for borehole pumps.
- ▶ The multi-sectoral response to the cholera outbreak continues, coordinated by the National Cholera Task Force, chaired by the Ministry of Health with support from WHO, UNICEF and health and WASH cluster partners.
- ▶ On 1 December 2017, the oral cholera vaccine (OVC) working group was convened in Juba to plan and prepare for the second round OVC campaigns in Kapoeta South, Kapoeta East and Tonj East, scheduled for 10-17 December 2017. In addition, OVC has been deployed to complement the cholera response in other high risk areas. Out of the 1.4 million doses secured by WHO in 2017, a total of 1.1 million doses have been deployed.
- ▶ Following an oral cholera vaccine working group meeting conducted on 14 November 2017 in Juba, a total of 737 819 doses of oral cholera vaccine have been requested from the Global stockpile. The vaccines will be used for second round campaigns in Kapoeta North, South and East, Tonj East, Juba, Aburoc and Malakal town. The first batch of 400 000 doses arrived in Juba on 27 November 2017 while the balance will be delivered during the second week of December 2017.

SITUATION INTERPRETATION

The people of South Sudan continue to experience unimaginable suffering in one of the worst humanitarian crises of 2017. Although humanitarian corridors are open from Sudan to South Sudan, the aid convoys are able to provide for only a small number of people at a time and severe constraints on humanitarian access continue. Urgent intervention from all humanitarian actors and the South Sudanese government is required to finally put an end to this situation.

The dry season is setting in. This will make road movement for prepositioning of essential medical kits possible. But at the same time, the dry season is a period of enhanced active armed conflict. It is also the time when communal conflict and cattle rustling becomes more frequent, with subsequent injuries and deaths.

A humanitarian snapshot of South Sudan, October 2017



Summary of major challenges and proposed actions

Challenges

- ▶ The outbreak of listeriosis in South Africa has been ongoing since January 2017 and all provinces in the country have been affected. Preliminary investigations are pointing to exposure to a widely available and common food type/source. Limited food consumption history data are available and no specific food item/s or food consumption patterns that could guide targeted environmental investigations have yet been identified.
- ▶ The humanitarian crisis in South Sudan has remained serious, as fighting, inter-communal conflicts and cattle rustling continue. The brunt of this conflict is borne by children, women and the elderly. Efforts of aid actors to provide the much needed humanitarian assistance are being impeded by restricted access to the people in need and direct violence against aid workers.

Proposed actions

- ▶ The national authorities in South Africa, including the National Institute for Communicable Diseases (NICD) and the food industries, should conduct in-depth and meticulous investigations to identify the magnitude and source of the listeriosis outbreak.
- ▶ This complex humanitarian emergency in South Sudan requires concerted efforts by the international community to address the root-causes of the conflict and alleviate the suffering of the people. Meanwhile, the humanitarian partners are urged to continue providing critical life-saving interventions, in spite of the difficult circumstances.

All events currently being monitored by WHO AFRO

| Country | Event | Grade† | WHO notified | Start of reporting period | End of reporting period | Total cases | Confirmed cases | Deaths | CFR | Comments |
|----------------|---|----------|--------------|---------------------------|-------------------------|-------------|-----------------|--------|------|---|
| New events | | | | | | | | | | |
| Ghana | Influenza A H1N1 | Ungraded | 5-Dec-17 | 29-Nov-17 | 9-Dec-17 | 77 | 12 | 4 | 5.2% | Detailed update given above. |
| Mauritania | Dengue haemorrhagic fever | Ungraded | 30-Nov-17 | 6-Dec-17 | 7-Dec-17 | 1 | 1 | - | - | On 30 November 2017, the Ministry of Health officially notified WHO about case of haemorrhagic dengue fever. On 25 November 2017, a 33-year-old female reported symptoms of high fever, arthralgia, headache, and epistaxis. A lab sample was tested positive for dengue serotype II. |
| South Africa | Listeriosis | Ungraded | 6-Dec-16 | 4-Dec-16 | 7-Dec-17 | 557 | 557 | 36 | 6.5% | Detailed update given above. |
| Ongoing events | | | | | | | | | | |
| Angola | Cholera | G1 | 15-Dec-16 | 1-Jan-17 | 22-Oct-17 | 375 | - | 21 | 5.6% | From week 1-42 of 2017, cases have been reported from Cabinda (219), Zaire (151), Luanda (3) and Maquela de Zombo (2). Only one new case (from Maquela de Zombo) was reported in week 42. No new cases have been reported in Luanda since week 4, in Soyo Zaire since week 26, and in Cabinda since week 28. |
| Angola | Malaria | Ungraded | 20-Nov-17 | n/a | 30-Sep-17 | - | - | - | - | The outbreak is ongoing since the beginning of the year. In the province of Benguela, a total of 311 661 malaria cases were reported from January to September 2017 as compared to 244 381 reported in all of 2016. In the province of Huambo, 155 311 malaria cases were reported from January to September 2017, as compared to 82138 cases during the same period in 2016. Epidemiological investigations are ongoing to better understand the outbreak in these two contiguous provinces. |
| Angola | Microcephaly - suspected Zika virus disease | Ungraded | 10-Oct-17 | End September | 29-Nov-17 | 42 | - | - | - | A cluster of microcephaly cases was detected in Luanda in late September 2017 and reported on 10 October 2017 by the provincial surveillance system. Of the 42 cases, 3 were stillbirths and 39 were live births. Suspected cases have been reported from Luanda province (39), Zaire province (1), Moxico province (1), and Benguela province (1). |
| Benin | Foodborne disease | Ungraded | 29-Nov-17 | 27-Nov-17 | 1-Dec-17 | 56 | - | - | - | 56 individuals residing in Sissèkpa became immediately ill with symptoms of vomiting after consuming a root vegetable locally known as "Léfè". Animals that were exposed to the vomit have reportedly died. The root vegetable has been collected for further analysis. Cases are currently under follow-up. |
| Burkina Faso | Dengue | G1 | 4-Oct-17 | 1-Jan-17 | 26-Nov-17 | 13 135 | - | 28 | 0.2% | Weekly case counts have decreased since week 44. The majority (61%) of cases were reported in the central region, notably in Ouagadougou (the capital). Dengue virus serotypes 1, 2, and 3 are circulating. |

| Country | Event | Grade† | WHO notified | Start of reporting period | End of reporting period | Total cases | Confirmed cases | Deaths | CFR | Comments |
|--------------------------|---------------------|----------|--------------|---------------------------|-------------------------|-------------|-----------------|--------|------|--|
| Burundi | Malaria | G1 | 22-Mar-17 | 1-Jan-17 | 30-Oct-17 | 6 449 927 | - | 2 836 | 0.0% | Weekly case counts are below the epidemiologic threshold but have increased since week 41. In week 42, 117 917 cases and 42 deaths were reported. The most affected health districts (DS) are: Kirundo (5 094), Muyinga (5 450) and Giteranyi (5 295). |
| Burundi | Cholera | Ungraded | 20-Aug-17 | 15-Aug-17 | 30-Oct-17 | 147 | - | - | - | During week 43, 9 suspected cases were reported in the health zones of Cibitoke (6) and Isare (3). As of 30 October 2017 a cumulative total of 147 cases and no deaths were reported. Seven districts have reported suspected cases to date. |
| Cameroon | Humanitarian crisis | G2 | 31-Dec-13 | 27-Jun-17 | 3-Nov-17 | - | - | - | - | In the beginning of November 2017, the general security situation in the Far North Region became worse. Terrorist attacks and suicide bombings are continuing and causing continuous displacement. Almost 10% of the population of Cameroon, particularly in the Far North, North, Adamaoua, and East Regions, is in need of humanitarian assistance as a result of the insecurity. To date, more than 58 838 refugees from Nigeria are present in Minawao Camp, and more than 21 000 other refugees have been identified out off the camp. In addition around 238 000 Internal Displaced People have been registered. |
| Cape Verde | Malaria | G2 | 26-Jul-17 | 1-Jan-17 | 19-Nov-17 | 433 | - | 2 | 0.5% | As of 19 November 2017, a total of 433 cases including 2 deaths have been reported, including 419 indigenous and 18 imported cases. The outbreak has been contained to the city of Praia. Cases reported from other areas/ islands all likely all acquired the infection during travel to Praia or overseas, and there is currently no evidence of indigenous transmission outside of Praia. |
| Central African Republic | Humanitarian crisis | G2 | 11-Dec-13 | 11-Dec-13 | 31-Oct-17 | - | - | - | - | The security situation in the Central African Republic has deteriorated in recent weeks, marked by widespread armed clashes across the country. Over 10 communities have been attacked in the past weeks, reportedly resulting in over 100 deaths, mostly civilians. These security incidents continue to cause new internal displacements. |
| Chad | Hepatitis E | G1 | 20-Dec-16 | 1-Aug-16 | 3-Dec-17 | 1 874 | 98 | 23 | 1.2% | Outbreaks are ongoing with in the Salamat Region predominantly affecting North and South Am Timan, Amsiné, South Am Timan, Mouraye, Foulonga and Aboudeia. The number of cases is decreasing since week 39. Of the 64 cases in pregnant women, five died (case fatality rate 7.8%) and 20 were hospitalized. Water chlorination activities have stopped by end of September due to lack of partners and financial means. Monitoring and case management are continuing. |

| Country | Event | Grade† | WHO notified | Start of reporting period | End of reporting period | Total cases | Confirmed cases | Deaths | CFR | Comments |
|----------------------------------|---------------------|----------|--------------|---------------------------|-------------------------|-------------|-----------------|--------|------|--|
| Chad | Cholera | G1 | 19-Aug-17 | 14-Aug-17 | 12-Nov-17 | 1 225 | 6 | 79 | 6.4% | The case incidence has been decreasing since week 42. In week 45, 9 new cases were reported in the Salamat region: Am-Timan (2), Mïrer (5), Khachkha-cha (1) and Mouraye (1). From week 37 to week 45, a total of 789 cases and 27 deaths occurred in Salamat region. No additional cases have been reported in the Sila Region since week 42. |
| Cote d'Ivoire | Dengue fever | Ungraded | 3-May-17 | 22-Apr-17 | 26-Nov-17 | 1 419 | 322 | 2 | 0.1% | Abidjan city remains the epicentre of this outbreak, accounting for 95% of the total reported cases. Of the 272 confirmed cases with available information on serotypes, 181 were dengue virus serotype 2 (DENV-2), 78 were DENV-3 and 13 were DENV-1. In addition, 50 samples were confirmed IgM positive by serology. |
| Democratic Republic of the Congo | Humanitarian crisis | G3 | 20-Dec-16 | 17-Apr-17 | 26-Nov-17 | - | - | - | - | The humanitarian crisis remains serious. An estimate of 8.5 million is in need of emergency aid assistance, including around 4.1 million Internally Displaced Persons (IDPs), and 552 000 refugees. More than 74% of the country's total IDPs are from Kasai region, north and south Kivu, and Tanganyika, and the last region had an increase in the number of IDPs by 16% this week. Access to healthcare services remains one of the major challenges due to the disruption of the health system infrastructure and insecurity. |
| Democratic Republic of the Congo | Cholera | | 16-Jan-15 | 1-Jan-17 | 26-Nov-17 | 49 488 | 841 | 1,015 | 2.1% | The outbreak continues with a downward trend compared to the last week. During week 47, a total of 1 647 new suspected cases and 37 deaths (CFR: 2.2%), were reported, compared to 1 908 cases and 53 deaths (CFR: 2.8%) in week 46. This week, around 33.3% of the total number of cases is from the Kasai region, and there is an increase in the number of suspected cases from Upper Lomami, Tanganyika, and Ituri regions. |
| Democratic Republic of the Congo | Measles | | 10-Jan-17 | 2-Jan-17 | 26-Nov-17 | 41 696 | 611 | 518 | 1.2% | The outbreak is still ongoing and has affected all 26 provinces. Although the current humanitarian situation disrupted the routine vaccination services, however, vaccination campaigns have been implemented early in 2017, and response activities still ongoing in the affected regions. |

| Country | Event | Grade† | WHO notified | Start of reporting period | End of reporting period | Total cases | Confirmed cases | Deaths | CFR | Comments |
|------------|------------------------------|--------------|--------------|---------------------------|-------------------------|-------------|-----------------|--------|------|--|
| Ethiopia | Humanitarian crisis | Protracted 3 | 15-Nov-15 | n/a | 17-Nov-17 | - | - | - | - | This complex emergency includes outbreaks (acute watery diarrhoea, measles, and acute jaundice syndrome), severe drought across northern, eastern, and central Ethiopia, and high levels of food insecurity and malnutrition. An estimate of 8.5 million people are food insecure and in need of humanitarian assistance. 6.26 million people are in need of health assistance and 0.38 million children are severely malnourished. Internally displaced persons are estimated to be around 1 099 776 and refugees are estimated around 883 546. |
| Ethiopia | Acute watery diarrhoea (AWD) | | 15-Nov-15 | 1-Jan-17 | 19-Nov-17 | 48 584 | - | 878 | 1.8% | The outbreak is showing a downward trend. Only 61 new cases have been reported this week from 4 regions, and the majority of new cases are from Amhara and Somali regions. As of now, 9 regions in Ethiopia have been affected, and 73.6% of the total cases are from Somali region. |
| Ethiopia | Measles | | 14-Jan-17 | 1-Jan-17 | 3-Nov-17 | 3 490 | - | - | - | The outbreak of measles is still ongoing but continues to improve. During week 44, 35 cases were reported including 3 lab-confirmed cases. Oromia Region remains the most affected region with 46% of the total reported cases, followed by Amhara 21 %, Addis Ababa 16 %, and Somali 20 %. |
| Kenya | Cholera | G1 | 6-Mar-17 | 1-Jan-17 | 7-Dec-17 | 4 079 | 724 | 76 | 1.9% | The outbreak is still ongoing, and it is active now in 7 counties: Nairobi, Garissa, Mombasa, Wajir, Kwale, Embu, and Kirinyaga counties. Approximately 60% of the cases are reported from Nairobi county. |
| Kenya | Malaria | Ungraded | - | 25-Sep-17 | 26-Oct-17 | 1 009 | 604 | 25 | 2.5% | The suspected outbreak is affecting 3 wards in Marsabit, namely Durkana (598 cases), North Horr (236 cases) and Loiyangalani (175 cases) wards. |
| Liberia | Measles | Ungraded | 24-Sep-17 | 6-Sep-17 | 3-Dec-17 | 1 607 | 255 | 2 | 0.1% | From week 1 to week 48, 1 607 cases were reported from 15 counties, including 225 laboratory confirmed, 336 clinically compatible and 199 epi-linked. Nimba county has had the greatest cumulative number of cases to date (235). Children between 1-4 years accounted for 49% of the cases. |
| Liberia | Lassa Fever | Ungraded | 14-Nov-17 | 3-Nov-17 | 24-Nov-17 | 70 | 28 | - | - | On 10 November 2017, four suspected cases of Lassa fever were reported from Phebe Hospital in Suakoko district, Bong County. One of the cases was confirmed positive by RT-PCR and the other three were negative. Since the beginning of 2017, a total of 70 suspected Lassa fever cases including 21 deaths (case fatality rate 30%) have been reported from nine counties in Liberia. |
| Madagascar | Plague | G2 | 13-Sep-17 | 13-Sep-17 | 5-Dec-17 | 2 529 | 513 | 215 | 8.5% | Cases include pneumonic (1 945, 77%), bubonic (370, 15%), septicemic (1) and unspecified (213) forms of disease. Of the 1 945 clinical cases of pneumonic plague, 393 (20%) have been confirmed, 621 (32%) are probable and 931 (48%) remain suspected. |

| Country | Event | Grade† | WHO notified | Start of reporting period | End of reporting period | Total cases | Confirmed cases | Deaths | CFR | Comments |
|------------|--|--------------|--------------|---------------------------|-------------------------|-------------|-----------------|--------|------|---|
| Mali | Humanitarian crisis | Protracted 1 | n/a | n/a | 19-Nov-17 | - | - | - | - | The security situation remains volatile in the north and centre of the country. At the last update, incidents of violence had been perpetrated against civilians, humanitarian workers, and political-administrative authorities. |
| Mali | Dengue fever | Ungraded | 4-Sep-17 | 1-Aug-17 | 19-Nov-17 | 418 | 33 | - | - | In week 46, 38 suspected cases were reported. No confirmed cases have been reported since week 41. |
| Mauritania | Criman-Congo haemorrhagic fever (CCHF) | Ungraded | 20-Nov-17 | 11-Nov-17 | 5-Dec-17 | 1 | 1 | - | - | On 20 November 2017 a confirmed case of Crimean-Congo haemorrhagic fever (CCHF) was reported in Nouakchott. The case, a 48 year old man, developed symptoms on 11 November 2017 and was hospitalized on 15 November 2017. A collected sample tested positive by PCR. Twenty contacts are currently listed for follow-up. |
| Mozambique | Cholera | Ungraded | 27-Oct-17 | 12-Aug-17 | 7-Dec-17 | 1 085 | - | 1 | 0.2% | The cholera outbreak continued. Cases have been reported from three districts (Memba, Erati and Nacaroa) in Namapula province. The outbreak started in mid-August 2017 from Memba district. Erati district reported cases in week 41, Nacoroa reported cases in week 42. |
| Niger | Humanitarian crisis | G2 | 1-Feb-15 | 1-Feb-15 | 11-Aug-17 | - | - | - | - | The security situation remains precarious and unpredictable. On 28 June 2017, 16 000 people were displaced after a suicide attack on an internally displaced persons camp in Kablewa. In another attack on 2 July 2017, 39 people from Ngalewa village, many of them children, were abducted. The onset of the rainy season is impeding the movements of armed forces around the region. |
| Niger | Hepatitis E | Ungraded | 2-Apr-17 | 2-Jan-17 | 19-Nov-17 | 2 087 | 439 | 39 | 1.9% | The outbreak continues to improve. The majority of cases have been reported from Diffa, N'Guigmi, and Bosso health districts. Case incidence continues to decline, 11 suspected cases have been reported in week 46. |
| Nigeria | Humanitarian crisis | | 10-Oct-16 | n/a | 30-Nov-17 | - | - | - | - | The protracted conflict has resulted in widespread population displacement, restricted access to basic social services, including healthcare and protection needs, and a deepening humanitarian crisis. An estimated 8.5 million people are in need of life-saving assistance, out of which 6.9 million require healthcare assistance. |
| Nigeria | Cholera (Borno State) | Protracted 3 | 20-Aug-17 | 14-Aug-17 | 3-Dec-17 | 5 357 | 354 | 61 | 1.1% | The outbreak is ongoing in three LGAs and only one LGA reported cases between 25 November and 3 December 2017. No cases have been reported from Jere and Monguno LGAs this week. For more than seven weeks no cases have been reported from Dikwa, MMC, and Mafa. Out of the 431 samples tested using RDTs, 354 (82%) were positive while 175 (46%) of 381 samples were culture positive. |

| Country | Event | Grade† | WHO notified | Start of reporting period | End of reporting period | Total cases | Confirmed cases | Deaths | CFR | Comments |
|-----------------------|-----------------------------------|----------|--------------|---------------------------|-------------------------|-------------|-----------------|--------|--------|--|
| Nigeria | Cholera (nation wide) | Ungraded | 7-Jun-17 | 1-Jan-17 | 24-Nov-17 | 3 656 | 42 | 84 | 2.3% | Between weeks 1 and 44, 3 656 cases were reported from 19 states compared to 714 suspected cases from 12 states during the same period in 2016. The cumulative total of cases and deaths in 2017 surpasses that observed during the same period in 2016 (560 suspected cases, 25 deaths). |
| Nigeria | Lassa Fever | Ungraded | 24-Mar-15 | 1-Dec-16 | 24-Nov-17 | 973 | 286 | 124 | 12.7% | The outbreak is currently active in five states: Ondo, Edo, Plateau, Bauchi, and Kaduna. In week 47, two new confirmed cases were reported from Edo (1) and Plateau (1) states. |
| Nigeria | Hepatitis E | Ungraded | 18-Jun-17 | 1-May-17 | 16-Nov-17 | 1 262 | 182 | 8 | 0.6% | Since the peak of the outbreak in Borno state in week 25 the number of cases has been re-increasing from week 42 to week 46, mainly due to the spread of the outbreak in Rann, Kala Balge. No case of acute jaundice was reported in Mobbar since week 35. |
| Nigeria | Yellow fever | Ungraded | 14-Sep-17 | 7-Sep-17 | 21-Nov-17 | 276 | 30 | 45 | 16.3% | A total of 276 suspected cases have been reported from fourteen states: Abia, Borno, Kogi, Kwara, Kebbi, Plateau, Zamfara, Enugu, Oyo, Anambra, Edo, Lagos, Kano, and Nasarawa States. Thirty cases have been laboratory-confirmed at IP Dakar (from Kano State, Kogi State, Kwara State and Zamfara State). A confirmed case was first reported from Kano State this week. |
| Nigeria | Monkeypox | Ungraded | 26-Sep-17 | 24-Sep-17 | 23-Nov-17 | 155 | 56 | - | - | Suspected cases are geographically spread across 21 states and the Federal Capital Territory (FCT). Fifty-six laboratory-confirmed cases have been reported from 12 states (Akwa Ibom, Bayelsa, Benue, Delta, Edo, Ekiti, Enugu, Lagos, Rivers, Imo, Katsina, and Nasarawa) and the FCT. |
| Nigeria | Acute haemorrhagic fever syndrome | Ungraded | 17-Nov-17 | 11-Nov-17 | n/a | 3 | - | 3 | 100.0% | Three people have died from an undiagnosed disease in Mabea area of Sokoto South LGA. Cases developed symptoms of bleeding from orifices, high fever and severe headache. The first case died on 11 November 2017, and the two other cases both died on 13 November 2017. No samples were collected from the deceased. Retroactive case search and clinicians sensitization are ongoing. |
| Nigeria | Event of unknown etiology | Ungraded | 16-Nov-17 | 1-Jul-17 | n/a | - | - | - | - | During week 44, the Nigerian CDC received reports of unknown disease and unexplained deaths in Gidan Dugus village of Wangara district. Cases were mostly children under 5 and onset dates of the first cases were in July 2017. Further investigation is ongoing. |
| São Tomé and Príncipe | Necrotising cellulitis/fasciitis | G2 | 10-Jan-17 | 25-Sep-16 | 26-Nov-17 | 2 368 | 0 | - | - | The incidence of new cases is fairly stable, with 35 cases reported during week 48. Six out of 7 districts in the country have reported cases in week 48. Currently, 25 cases are receiving care in hospital. No deaths have been directly attributed to the infection. |
| Senegal | Dengue fever | Ungraded | 30-Sep-17 | 28-09-2017 | 3-Dec-17 | 767 | 132 | - | - | Detailed update given above. |

| Country | Event | Grade† | WHO notified | Start of reporting period | End of reporting period | Total cases | Confirmed cases | Deaths | CFR | Comments |
|-------------|-------------------------------|----------|--------------|---------------------------|-------------------------|-------------|-----------------|--------|------|--|
| Seychelles | Dengue fever | Ungraded | 20-Jul-17 | 18-Dec-15 | 28-Nov-17 | 4 233 | 1 429 | - | - | As of 28 November 2017, 4 233 cases have been reported from all regions of the three main islands (Mahé, Praslin and La Digue). The trend in the number of cases has been decreasing since week 23. |
| South Sudan | Humanitarian crisis | G3 | 15-Aug-16 | n/a | 30-Nov-17 | - | - | - | - | The situation remains volatile, fighting on multiple fronts and displacement continues. The starting of the dry season expected to improve humanitarian access to the most vulnerable population but at the same time communal conflicts expected to be more frequent with subsequent injuries and deaths. Severe acute malnutrition, malaria, measles, kala-azar, and cholera are the top ranking public health risks affecting the already distressed populations. |
| South Sudan | Cholera | Ungraded | 25-Aug-16 | 18-Jun-17 | 1-Dec-17 | 21 556 | 1 585 | 462 | 2.2% | Cholera transmission continues to decline nationally. A total of 15 cases and one death (CFR 6.7%) were reported in week 48, as compared to over 1 700 cases per week at the height of the most recent wave of the epidemic in week 23. For the past four weeks, only two counties (Juba and Budi), continue reporting cases. |
| Tanzania | Cholera | G1 | 20-Aug-15 | 1-Jan-17 | 3-Dec-17 | 4 308 | - | 77 | 1.8% | The trend of the outbreak in Tanzania Mainland has increased. In week 48, a total of 216 new cases and 8 deaths (CFR:3.7%), have been reported, compared to 117 cases and 4 deaths (3.4%) in week 47. This week there is a decrease in the number of the regions that reported cases to 7 out of 26 regions, compared to 9 regions in week 47. |
| Uganda | Humanitarian crisis - refugee | Ungraded | 20-Jul-17 | n/a | 30-Aug-17 | - | - | - | - | The influx of refugees to Uganda has continued as the security situation in the neighbouring countries remains fragile. According to UNHCR, the total number of registered refugee and asylum seekers in Uganda stands at 1 326 750, as of 1 August 2017. More than 75% of the refugees are from South Sudan. Detailed update given in the week 35 bulletin. |
| Uganda | Measles | Ungraded | 8-Aug-17 | 24-Apr-17 | 3-Oct-17 | 623 | 34 | - | - | The outbreak is in the two urban districts of Kampala (310 cases) and Wakiso (313 cases). |
| Uganda | Cholera | Ungraded | 28-Sep-17 | 25-Sep-17 | 29-Nov-17 | 225 | 17 | 4 | 1.8% | The outbreak in Kasese District is still ongoing. The number of sub-counties affected by this outbreak has continued to rise and has now reached twelve sub-counties. Nyakiyumbu sub county remains the most affected in the district. Another outbreak was identified in Kisoro district. So far, three cases were admitted, including 1 confirmed. |

| Country | Event | Grade† | WHO notified | Start of reporting period | End of reporting period | Total cases | Confirmed cases | Deaths | CFR | Comments |
|------------------------|-------------------------|----------|--------------|---------------------------|-------------------------|-------------|-----------------|--------|--------|--|
| Uganda | Rift Valley fever (RVF) | Ungraded | 22-Nov-17 | 14-Nov-17 | 23-Nov-17 | 2 | 2 | 2 | 100.0% | On 21 November 2017, the Uganda Virus Research Institute (UVRI) alerted the MoH of a confirmed case of Rift Valley Fever (RVF). The case was a 26-years-old male from Kiboga district, Kibinga sub-county, who worked with cattle in a forest reserve. He died on 15 November 2017 and was buried on 17 November 2017. On 23 November 2017, a second confirmed and fatal case of RVF was reported in Mityana district. |
| Zambia | Cholera | G1 | 4-Oct-17 | 4-Oct-17 | 7-Dec-17 | 547 | 238 | 15 | 2.7% | The outbreak is no longer localised in the peri-urban townships on the western side of Lusaka City, but has spread to the eastern side with a new case reported in Chelstone sub-district. Affected sub-districts now include: Chipata, Kanyama, Chawama, Matero, Chilenje and Chelston. |
| Zambia | Anthrax | Ungraded | 22-Nov-17 | 29-Sep-17 | 14-Nov-17 | 24 | - | 1 | 4.2% | 0 |
| Zimbabwe | Typhoid fever | Ungraded | - | 1-Oct-17 | 19-Nov-17 | 1 065 | 82 | - | - | On 17 October 2017, a confirmed case of typhoid fever was reported from Matapi area of Mbare in Harare. As of 19 November 2017, the outbreak has spread from its epicentre in Matapi to other suburbs in Harare and areas outside of Harare. |
| Recently closed events | | | | | | | | | | |
| Uganda | Marburg | G2 | 17-Oct-17 | 20-Sep-17 | 21-Nov-17 | 4 | 3 | 3 | 75.0% | On 7 December 2017, the Ministry of Health declared that end of the Marburg outbreak. All contacts listed have completed the 21-day follow-up and enhanced surveillance has been conducted for another 21-day cycle (twice the maximum incubation period of Marburg virus) with now new cases reported. |

†Grading is an internal WHO process, based on the Emergency Response Framework. For further information, please see the Emergency Response Framework: <http://www.who.int/hac/about/erf/en/>.
Data are taken from the most recently available situation reports sent to WHO AFRO. Numbers are subject to change as the situations are dynamic.

© WHO Regional Office for Africa

This is not an official publication of the World Health Organization.

Correspondence on this publication may be directed to:

Dr Benido Impouma
Programme Area Manager, Health Information & Risk Assessment
WHO Health Emergencies Programme
WHO Regional Office for Africa
P O Box. 06 Cité du Djoué, Brazzaville, Congo
Email: afrooutbreak@who.int

Requests for permission to reproduce or translate this publication – whether for sale or for non-commercial distribution – should be sent to the same address.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate borderlines for which there may not yet be full agreement.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either express or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization or its Regional Office for Africa be liable for damages arising from its use.

Contributors

S. Ohene (Ghana)
M. Groepe (South Africa)
P. Songolo (Zambia)
I. Oumar (Senegal)
G. Guracha (South Sudan)

Graphic design

Mr. A. Moussongo

Editorial Team

Dr. B. Impouma
Dr. C. Okot
Dr. E. Hamblion
Dr. B. Farham
Dr. V. Sodjinou
Ms. C. Machingaidze
Mr. I. Rawi
Dr. P. Ndumbi
Dr. K. Heitzinger
Dr. S. Funke

Production Team

Mr. A. Bukhari
Mr. T. Mlanda
Mr. C. Massidi

Editorial Advisory Group

Dr. I. Soce-Fall, *Regional Emergency Director*
Dr. B. Impouma
Dr. Z. Yoti
Dr. Y. Ali Ahmed
Dr. M. Yao
Dr. M. Djingarey

Data sources

Data is provided by Member States through WHO Country Offices via regular situation reports, teleconferences and email exchanges. Situations are evolving and dynamic therefore numbers stated are subject to change.