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## **EDITORIAL**

This edition of the Communiqué, our last for 2019, includes reports on rabies, malaria, and an update on the Ebola virus disease in the Democratic Republic of Congo.

There is also a description of the public health response to suspected measles cases in the Eastern Cape Province. The WHO and South African Expanded Programme of Immunisation (EPI) regards an outbreak as 'three or more measles cases in one district in one month'. Following the alert from the Notifiable Medical Conditions Surveillance System (NMCSS), officials in this province responded appropriately by conducting investigations into cases, identified and vaccinated contacts (so-called 'ring vaccinations'), and initiated a local vaccination campaign. A number of meetings and teleconferences to coordinate these responses and address the public health issues were held, and the National Advisory Group on Immunisation (NAGI) was consulted. Following additional testing by the NICD, it was de-

termined that these cases were in fact due to rubella, and that no further public health responses were required. The NICD issued a statement, which is available at <http://www.nicd.ac.za/rapid-response-to-suspected-measles-cases-in-eastern-cape/>. As measles is highly contagious, and there is an elimination drive, the WHO and EPI programmes advocate rapid initiation of response. Additional testing and resolution of complex results, as happened in this case, may take up to a week. Therefore, the district and provincial health teams are to be commended on their rapid and appropriate responses.

May we wish our readership safe, communicable-disease-free travels and a prosperous 2020.

**1 ZONOTIC AND VECTOR-BORNE DISEASES**

**a An update on rabies in South Africa**

There were ten laboratory-confirmed cases of human rabies in South Africa in 2019. The cases originated from KwaZulu-Natal (n=4), Eastern Cape (n=4) and Limpopo (n=2) provinces. Furthermore, four deaths were reported where rabies was the probable cause of death (cases were compatible with rabies clinical manifestations and a history of exposure, but it was not possible to confirm or exclude a diagnosis of rabies in the laboratory due to no or insufficient specimens received). These probable human rabies cases were documented in KwaZulu-Natal (n=2) and Eastern Cape (n=2) provinces.

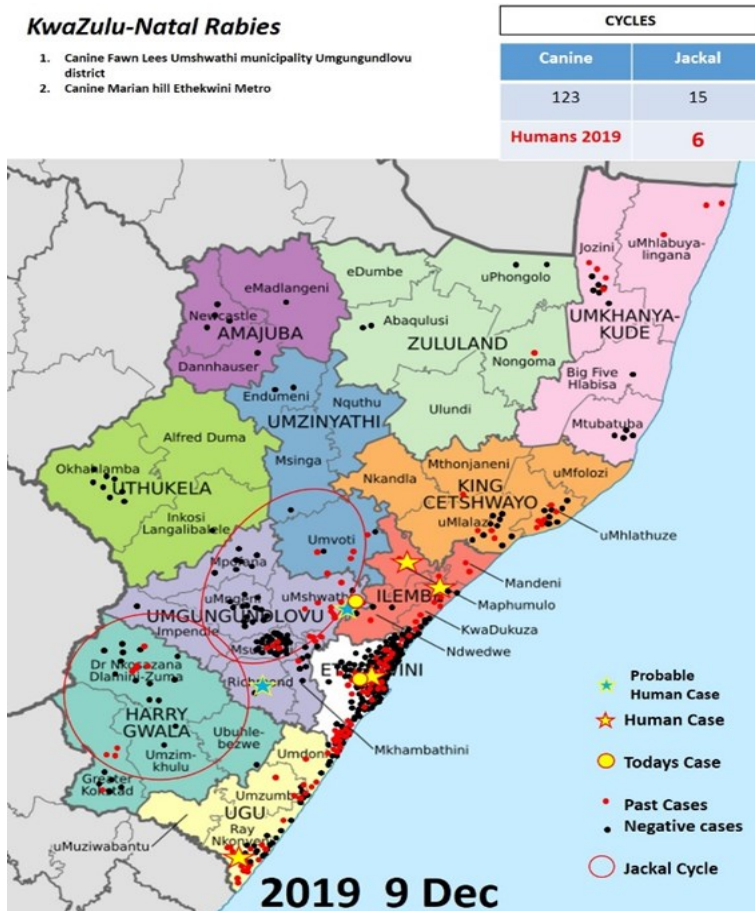
Rabies cases are likely underreported in South Africa because people may die at home or even in hospital without adequate laboratory investigation. Human rabies in South Africa is primarily reported from KwaZulu-Natal (Figure 1), Eastern Cape, Mpumalanga and Limpopo provinces, where rabid dogs transmit the rabies virus to humans. Safe and efficacious animal and human vaccines are available to prevent human deaths from rabies, while awareness is the key driver for success of communities to engage in effective rabies prevention.

Dogs and cats are required to be vaccinated, which is available free of charge in the public sector. Vaccination of animals is the most cost-effective way to decrease rabies in animals and prevent cases in humans.

Ahead of the holiday season, people travelling with their pets are urged to ensure that vaccinations are up to date in the animals. This will ensure protection of the animal, but will also protect any persons who may have contact with the animal. When any significant contact with suspected rabid animals occurs (in particular with stray dogs or cats), rabies post-exposure prophylaxis (PEP) should be sought as a matter of urgency.

For more information on rabies and rabies PEP, visit [www.nicd.ac.za](http://www.nicd.ac.za)

**Source:** Centre for Emerging Zoonotic and Parasitic Diseases, NICD-NHLS; [januszp@nicd.ac.za](mailto:januszp@nicd.ac.za)



**Figure 1.** Canine and human rabies detection in KwaZulu-Natal Province.

Source: Kevin le Roux, Department of Agriculture, environment and Rural Development, KwaZulu-Natal

## 2 VACCINE-PREVENTABLE DISEASES

### a Public health response to suspected measles cases in Sarah Baartman District, Eastern Cape Province

Measles is a highly contagious, vaccine preventable disease that is targeted for elimination by 2020 under the Global Vaccine Action Plan. In South Africa, measles vaccine is routinely administered at six and 12 months of age through the National Expanded Programme on Immunisation (EPI).

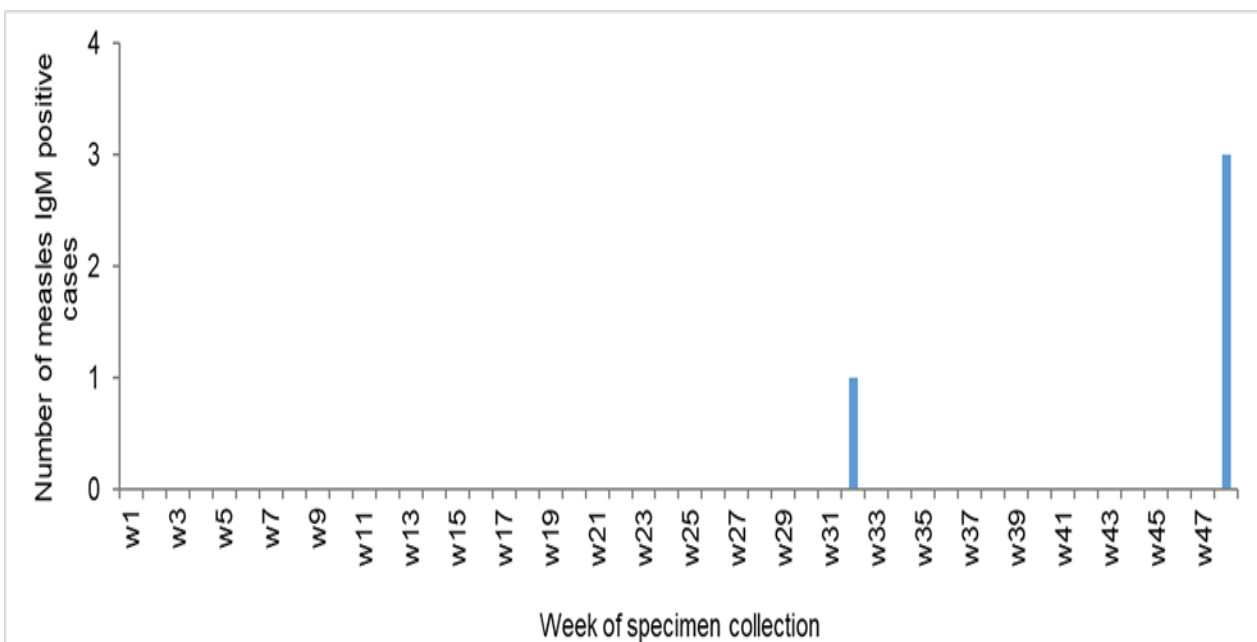
Between 23 and 24 November 2019 (week 48), seven cases were investigated for suspected measles infection at a health facility in Sarah Baartman Health District, Eastern Cape Province. Three (3/7) cases tested IgM positive for measles (Figure 2). These cases were also IgM positive for rubella. Case investigation determined that 2/3 cases had presented with rash only, and 1/3 with a febrile rash. Two of the three cases were up-to-date with their measles vaccination, and 1/3 had unknown vaccination status. None of the three cases had travelled out of the Aberdeen area in Sarah Baartman District. Thirty-seven contacts of the cases were identified and vaccinated. Community-wide mass vaccination campaign was conducted, and a total of 731 children aged under-five was vaccinated.

Laboratory and epidemiological analysis conducted at the National Institute for Communicable Diseases (NICD) determined that the reported cases were consistent with a rubella cluster rather than a measles cluster. The signs and symptoms of rubella and measles are similar and laboratory testing can usu-

ally, but not always, differentiate the two diseases. In patients with rubella, a biological increase in antibody titre (IgM) to measles is well described. This biological cross-reaction can lead to false-positive measles results in patients with rubella infection. Hence, clinical information and vaccination history is important in interpreting such cases.

Rubella circulates widely in South Africa, and rubella vaccine is not included in the routine EPI vaccination schedule. Rubella infection is usually mild, although infection in pregnancy, especially in the first trimester, may lead to congenital rubella syndrome. Heightened surveillance for febrile rash illness is important and should include laboratory testing of all febrile rash cases. Additional information and resources on measles and rubella can be found on the NICD's Diseases A-Z index available on <http://www.nicd.ac.za/diseases-a-z-index/>

**Source:** Sarah Baartman Health District, Eastern Cape Provincial Department of Health; Provincial Epidemiology Team, Division of Public Health Surveillance and Response and Centre for Vaccines and Immunology, NICD-NHLS; melindas@nicd.ac.za



**Figure 2.** Measles IgM positive cases by week of specimen collection, Sarah Baartman Health District, Eastern Cape Province, 1 January 2019 to 24 November 2019 (N=4)

### 3 INTERNATIONAL OUTBREAKS OF IMPORTANCE

#### a An update on Ebola virus disease outbreak in Democratic Republic of Congo

The Ebola virus disease (EVD) outbreak was declared on 1 August 2018. There has been a steady decrease in confirmed cases in the Democratic Republic of the Congo (DRC) over the past three months. The provinces where the outbreak is currently happening are North Kivu, South Kivu and Ituri.

As of 8 December 2019, 3 324 EVD cases were reported, including 118 probable cases and 3 206 confirmed cases. A total of 2 209 deaths was reported with a case fatality rate of 66%. Out of the total confirmed and probable cases, 56% (1 873) were female, 28% (939) were children aged less than 18 years and 5% (164) were healthcare workers. In the past week, from 4 to 8 December 2019, eleven new confirmed cases were reported in the two affected provinces in four health zones, in comparison to 126 cases reported during the peak of the epidemic. Due to security concerns, disruption of operations at many point-of-care areas in Mambasa, Biakato, Mangina and Beni continues. However, preservation of essential response activities in these health zones remain a high priority.

From 18 November to 8 December, a total of 28 confirmed cases was reported from 14 of the 71 health areas within four neighbouring active health zones in North Kivu and Ituri provinces: Mabalako (43%, n=12), Mandima (25%, n=7), Beni (25%, n=7), and Oicha (7%, n=2). To date, there has been no new confirmed cases in Nyakunde Health Zone in the past 42 days. Over 237 000 contacts have been registered and 2 955 are currently under surveillance as of 8 December 2019. An average of 3 628 alerts were received daily and 96% were investigated within 24 hours of reporting. An estimated 75% of contacts were followed on a daily basis in the last seven days in the health zones with

continued operations. Currently, the government, Ministry of Health (MOH), other national authorities in the DRC, WHO and partners are implementing outbreak control interventions in order to break the remaining transmission chains as well as to ensure surrounding provinces are response-ready.

Regarding vaccination, a total of 256 381 people was vaccinated from 8 August 2018 to 10 December 2019. Additionally, the Johnson & Johnson 2-dose Ebola vaccine (Ad26.ZEBOV/MVABN-Filo) was introduced on 14 November 2019, and vaccination is continuing in the Karisimbi health zone with 1 300 people vaccinated as of 10 December 2019.

Based on current information, the WHO still advises against any restrictions of travel or trade with the DRC. WHO will continue to closely monitor and verify trade and travel measures related to the EVD outbreak. Currently, no country has implemented travel measures that had a significant interference with international traffic to and from DRC. Travelers should seek medical advice before travel and should practice good hygiene.

As of 10 December 2019, there have been no EVD cases in South Africa associated with the current outbreak in the DRC. In addition, there are no suspected cases of EVD in South Africa at present. Surveillance amongst returned travellers is ongoing.

**Source:** WHO: [www.who.int](http://www.who.int); WHO-AFRO, Division of Public Health Surveillance and Response, NICD-NHLS ([outbreak@nicd.ac.za](mailto:outbreak@nicd.ac.za))

### 4 SEASONAL DISEASES

#### a A case of odyssean malaria, City of Tshwane, Gauteng Province

NICD was notified of a malaria case in Soshanguve, City of Tshwane, Gauteng Province. A team comprising members of the NICD Parasitology and Vector Control Reference Laboratories, District Health Services, Environmental Health and Communicable Disease Control programmes, conducted an investigation in the area on 4 December 2019. The patient, a 19-year-old pregnant woman, had not travelled to a known malaria area. She presented with 'flu-like illness at a primary health facility in mid-November, and was referred to hospital, where malaria was diagnosed and treated. The patient's family lives in a community where many persons from local and international malaria-endemic regions reside.

The patient likely acquired malaria from the bite of an infective *Anopheles* mosquito inadvertently transported from a malaria-endemic area via a road vehicle, a phenomenon known as odyssean malaria (see NICD Communiqués vol. 18 (5) May 2019 and vol. 18 (1) January 2019). No specific vector control interventions are required and such cases do not represent an expansion of the malaria transmission zone in South Africa. Malaria awareness education activities were done in the area.

Increases in imported and odyssean malaria cases are anticipated during and after the festive season holidays. All healthcare practitioners are encouraged to consider malaria as a differential diagnosis

in patients presenting with unexplained fever (>38°C) and progressive flu-like illness, even in the absence of a travel history to a malaria-endemic region. Primary health clinics in Gauteng Province are supplied with rapid diagnostic test kits and artemether-lumefantrine (Coartem) for early diagnosis and treatment of malaria. Malaria alerts, treatment and

prevention guidelines are available on the NICD website ([www.nicd.ac.za](http://www.nicd.ac.za)).

**Source:** Centre for Emerging Zoonotic and Parasitic Diseases, NICD-NHLS; Tshwane Health District, Environmental Health, and Communicable Disease Control; [johnf@nicd.ac.za](mailto:johnf@nicd.ac.za)

## 5 BEYOND OUR BORDERS

The 'Beyond our Borders' column focuses on selected and current international diseases that may affect South Africans travelling abroad. Numbers correspond to Figure 3 on page 6.

### 1. Measles: Samoa, Tonga, Fiji

A resurgence of measles cases has been seen in all WHO regions since 2017. In the Asia Pacific region, outbreaks of measles have been reported from countries where measles has previously been eliminated (including Australia, Cambodia, Japan, New Zealand, Republic of Korea), and in endemic countries with high incidence rates (including Lao People's Democratic Republic, Malaysia, the Philippines, Thailand, and Vietnam). Pacific Island countries and areas (PICs) are responding to outbreaks of measles with cases being reported for the first time since 2014. To date, Samoa, Tonga, Fiji and American Samoa have reported measles cases. The outbreaks in Samoa and Tonga are caused by the D8 strain of measles virus. Measles vaccine coverage varies in PICs, ranging from 31% in Samoa to 99% in some places.

On 16 October 2019, the Samoa Ministry of Health (MoH) declared a measles outbreak with a state of emergency being declared on 15 Nov 2019. From 1 January through 4 December 2019, a total of 4 217 confirmed and suspected cases, including 62 measles-associated deaths, have been reported, with the majority of cases reported among children under 5 years of age. In 2018, WHO-UNICEF estimated the national routine immunisation coverage for the measles-containing-vaccine 1st dose (MCV1) and the measles-containing-vaccine 2nd dose (MCV2) to be 31% and 13%, respectively.

On 22 October 2019, the Tonga MoH declared a measles outbreak. The first cluster of cases was among teenage rugby players who had travelled to Auckland, New Zealand. The outbreak has been characterised by transmission in schools and has affected mainly teenage males and young adults. A total of 84% (260 cases) of measles cases is reported in people between the ages of 10 and 24 years. As of 2 December 2019, 440 cases of confirmed or suspected measles and no deaths have been reported. Most cases are males and have been reported from Tongatapu island. No measles-related deaths have been reported. In 2018, the Tonga MoH estimated the national routine immunisation coverage for MCV1 and MCV2 to be over 95% in Tonga.

Fiji declared a measles outbreak on 7 November 2019. From 1 January to 3 December 2019, a total of 15 confirmed cases of measles has been reported, of which 11 cases were from, or linked to, cases in Serua/Namosi subdivision, two were from Suva, and two were from Rewa subdivision. No measles-related deaths have been reported. In 2018, WHO-UNICEF estimated the national routine immunisation coverage for MCV1 and MCV2 to be 94% in Fiji.

The Ministry of Health in each affected country is coordinating response efforts with support from WHO and partners.

### 2. Dengue: Central and South America

The incidence of dengue has grown dramatically around the world in recent decades. In Central and South America, a total of 2 733 635 cases of dengue (280 cases per 100 000 population) was reported from 1 January to 18 October 2019, including 1 206 deaths. Of the total cases, 1 217 196 (44.5%) were laboratory-confirmed and 22 127 (0.8%) were classified as severe dengue. The reported case-fatality rate was 0.044%.

The number of cases reported in 2019 as of epidemiological week 42 (2 733 635) is the largest recorded in the history of dengue in this region, exceeding by 13% the number of cases reported in the epidemic year of 2015.

The four dengue virus serotypes (DENV 1, DENV 2, DENV 3, and DENV 4) are present and co-circulation of all four has been detected in Brazil, Guatemala, and Mexico in 2019. In Colombia, Guadeloupe, Martinique, Panama and Venezuela, serotypes DENV 1, DENV 2, and DENV 3 have been co-circulating; and in Paraguay and Peru, DENV 1, DENV 2, and DENV 4 have been co-circulating.

In addition to Central and South America, several countries in WHO's Southeast Asia Region, including Bangladesh, Indonesia, Sri Lanka and Thailand, and in WHO's Western Pacific Region, such as Malaysia, Philippines and Vietnam, have recorded more than 50 000 dengue cases. Dengue outbreaks in WHO's Eastern Mediterranean Region continue in Pakistan, Sudan, Yemen; and many countries of WHO's Africa Region, including Côte d'Ivoire and

Tanzania, are also affected.

Given the increase in cases of dengue and severe dengue in several countries and territories, WHO is working across all three levels of the Organization (global, regional and national) to coordinate and harmonise support to all affected countries based on their needs.

### 3. Influenza: USA

According to the Centers for Disease Control and Prevention (CDC), at least 2.6 million influenza cases, 23 000 hospitalisations and 1 300 flu related deaths have been reported since 1 October 2019. Federal health officials say seasonal influenza activity in the United States has been elevated for five weeks and continues to increase. Widespread flu activity has been reported in 23 states, including in California, Pennsylvania, New York, Washington and South Carolina.

All three strains of the flu are circulating. Nationally, influenza B has been the most common. Influenza A (H1N1) is the next most common, followed by influenza A(H3N2). Communities are being urged to get vaccinated. Flu vaccination is the best way to prevent flu and its potentially serious complications.

### 4. Q fever: Spain

A total of 12 Q fever cases has been identified and treated in health centers of La Rioja and in Basque Country, Spain, with a 13<sup>th</sup> person awaiting bacteriological results. The patients in Basque Country are believed to have acquired the disease in La Rioja, where they came into contact with infected animals.

Q fever can be prevented by avoiding contact with animals, especially while animals are giving birth.

Good hygiene practices in premises dealing with animals, particularly with sheep, cattle and goats, will also help prevent transmission. As the disease can be transmitted to humans through contaminated milk, pasteurisation of milk and milk products will help prevent infection.

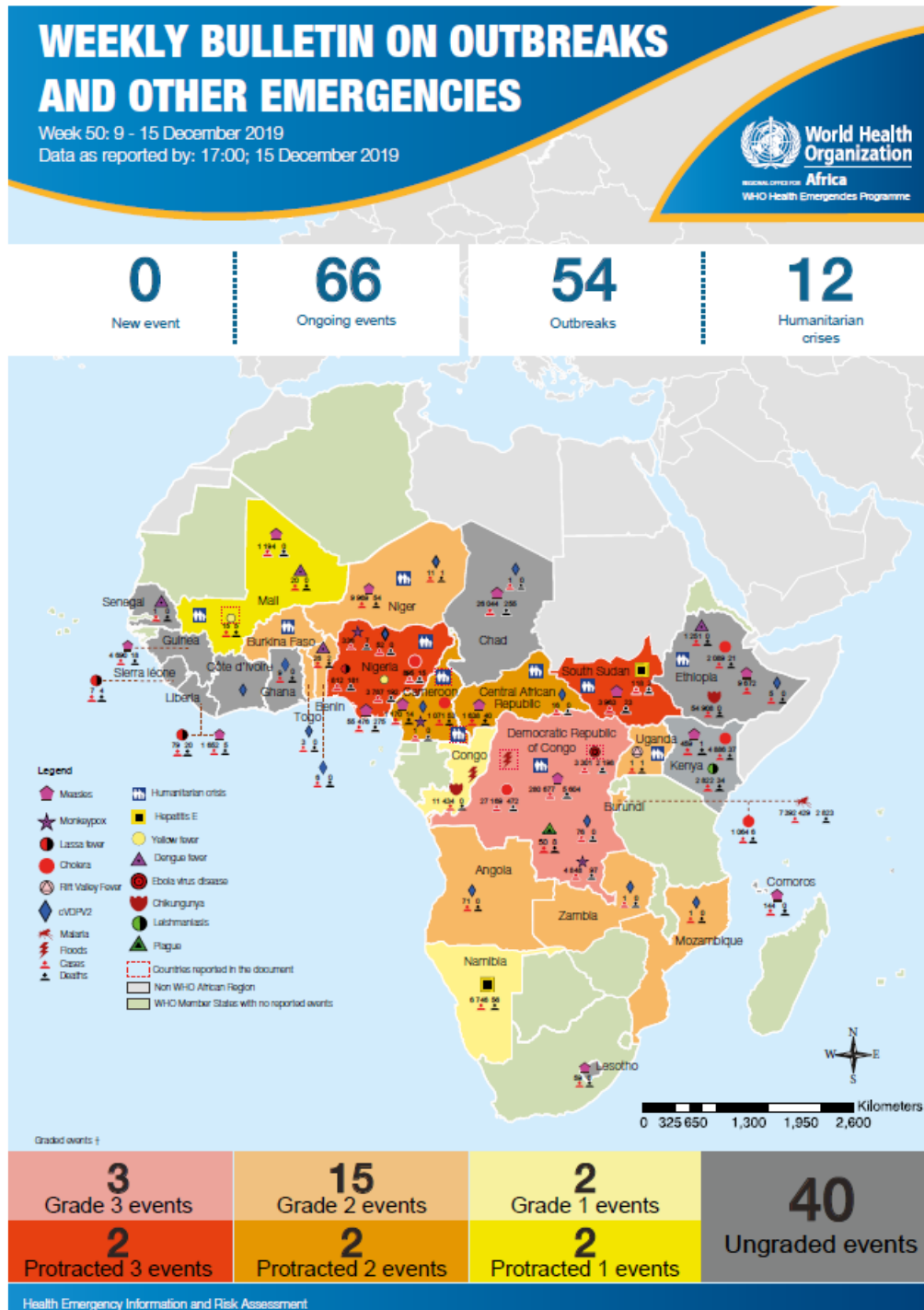
Q fever is a zoonosis. It is usually occupationally acquired by workers from the meat and livestock industries, shearers, veterinarians and laboratory personnel. It is caused by *Coxiella burnetii*, a bacterium which is highly resistant to drying and heat, and is therefore able to survive for long periods in the environment. Animal reservoirs of *C. burnetii* include sheep, cattle, goats, dogs and cats, and often causes reproductive losses in the pregnant animals. Infected animals can be difficult to recognise as non-pregnant animals do not seem to have any obvious clinical signs. *Coxiella burnetii* is shed in urine, faeces, milk, and most especially in birthing products. Humans usually become infected by inhaling aerosolised organisms, and can be asymptomatic or may develop acute 'flu-like symptoms within 2-3 weeks of exposure. Most persons with acute Q fever infections recover; however, some may experience serious illness with complications that may include pneumonia, granulomatous hepatitis, endocarditis, myocarditis, and central nervous system involvement. Pregnant women who are infected may be at risk for pre-term delivery or miscarriage.

**Source:** Promed ([www.promed.org](http://www.promed.org)), World Health Organization ([www.who.int](http://www.who.int))



**Figure 3.** Current outbreaks/events that may have implications for travellers. Numbers correspond to text above. The red dot is the approximate location of the outbreak or event.

**6 WHO-AFRO: OUTBREAKS AND EMERGENCIES**



**Figure 4.** The Weekly WHO Outbreak and Emergencies Bulletin focuses on selected public health emergencies occurring in the WHO African Region. The African Region WHO Health Emergencies Programme is currently monitoring 66 events. For more information see link below: <https://apps.who.int/iris/bitstream/handle/10665/330150/OEW50-16122019.pdf>