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Editor's Note



Dr Ann Mathews

In this month's Communicable Diseases Communiqué, we present the demographic and clinical characteristics of the first 428 persons under investigation (PUI) for the coronavirus disease 2019 (COVID-19) outbreak in South Africa. In the context of the current nation-wide lockdown aimed at reducing the incidence of cases, we seek to understand the characteristics that could help identify risk categories.

The Ebola virus disease (EVD) outbreak in the Democratic Republic of Congo continues, with four new cases identified between 13 and 19 April 2020. Despite the 40 days gap since the last person tested negative, and with this new flare-up, the outbreak is deemed ongoing. The World Health Organization recommended criteria for declaring the end of the EVD outbreak includes a 42-day waiting period in that undetected chains of transmission or new flare-ups may arise.

There have been no confirmed cases of rabies in South Africa for 2020. Since the start of 2020, there have been seven suspected cases of tetanus notified through the national Notifiable Medical Conditions Surveillance System (NMCSS). Two of these were suspected cases of neonatal tetanus, both from Mpumalanga Province. For the month of March 2020, 904 cases of malaria have been notified through the NMCSS. This is a 30% drop in case numbers as compared to the same period last year, 2019.

Other international communicable disease outbreaks of significance include yellow fever in South Sudan, malaria in Namibia, Lassa fever in Nigeria and measles outbreaks in the Democratic Republic of Congo, Liberia and Mexico, which are further explained in our 'Beyond our Borders' articles.

ZOONOTIC AND VECTOR-BORNE DISEASES

An update on rabies in South Africa

No cases of human rabies have been laboratory confirmed in South Africa for 2020 to date. In 2019, South Africa reported a total of ten laboratory-confirmed cases. In addition, six more deaths were classified as probable rabies cases (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). The confirmed cases of 2019 were reported from Limpopo (n=2), KwaZulu-Natal (n=4) and Eastern Cape (n=4) provinces. Of the six probable cases from 2019, three each were reported from KwaZulu-Natal and Eastern Cape provinces.

Positive animal case trends for 2020 have remained mostly consistent with that of 2019, apart from a rise in cases noted in March 2020. This was as a result of an aggressive outbreak in the south of eThekweni District (i.e. Durban) which accounts for 64% of KwaZulu-Natal's total cases for the year to date (Figure 1).

Rabies is a preventable disease. Domestic dogs and cats can be vaccinated against the disease, not only protecting the animal but also all persons who may come into contact with the animal. The Animal Diseases Act, 1984 (Act No 35 of 1984) law mandates owners to have their pets vaccinated against rabies between the ages of three and seven months, again at 12 months later and then every three years. It is important to note that the vast majority of human rabies cases in South Africa have been linked to exposures to rabid dogs. When a person comes into contact with a suspected or confirmed rabid animal, rabies post-exposure prophylaxis (PEP) can be given to prevent infection with the rabies virus.

Article source: Centre for Emerging Zoonotic and Parasitic Diseases, NICD-NHLS; januszp@nicd.ac.za

Rabies PEP includes thorough wound washing with soap and water, followed by the administration of rabies vaccine and, if indicated, rabies immunoglobulin. For more details on how to prevent rabies virus infection, please visit the NICD website on <https://www.nicd.ac.za/diseases-a-z-index/rabies/>.

Healthcare workers can also consider completing an online course available through the Global Alliance for Rabies Control (GARC). The course is available free of charge on the GARC website (<https://rabiesalliance.org/capacity-building/gep>).

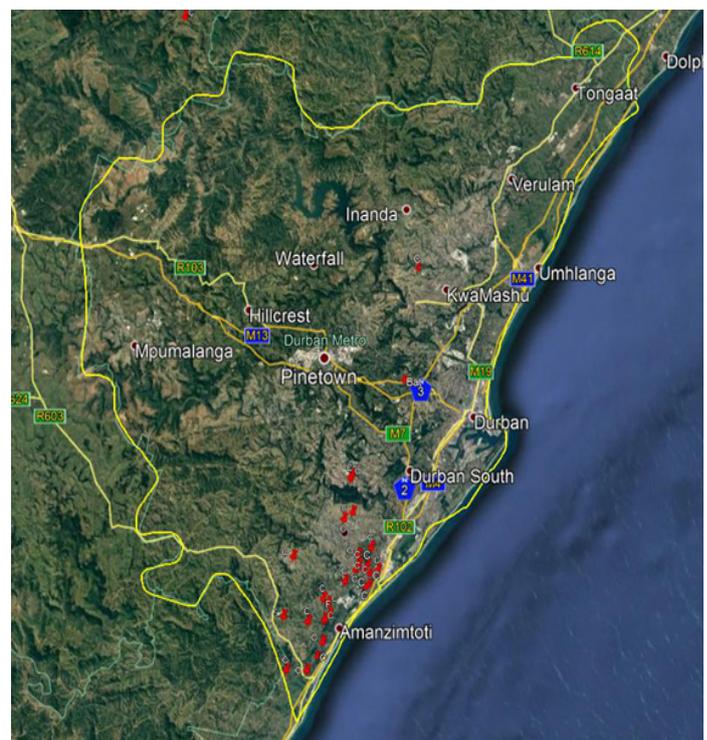


Figure 1. Distribution of positive animal cases for 2020 to date, eThekweni District, KwaZulu-Natal Province

Source: Kevin le Roux, Department of Agriculture, Environment and Rural Development, KwaZulu-Natal Province.

VACCINE-PREVENTABLE DISEASES**Neonatal tetanus**

There have been seven tetanus cases notified via the national Notifiable Medical Conditions Surveillance System (NMCSS) from 1 January 2020 to 21 April 2020. Two of these were suspected neonatal tetanus, both from Mpumalanga Province.

The first suspected neonatal tetanus case was born in Bushbuckridge Clinic, Ehlanzeni District. The tetanus vaccination status of the mother was unknown. An unknown substance was placed on the newborn's umbilical cord. This child is alive and doing well. The second case was born in Middelburg Hospital, Nkangala District. The mother was not given tetanus toxoid during pregnancy. A coin and an unknown substance from a traditional healer were placed on the umbilical cord. The child died following admission.

The remaining five suspected tetanus cases ranged in age from five to 66 years, comprising one confirmed case and four cases pending classification. There is no laboratory test for tetanus. Cases are classified after reviewing medical records.

Tetanus is a category 2 notifiable medical condition caused by the bacterium *Clostridium tetani*. It typically presents as painful muscle spasms. Infection can result in

serious complications, including death, in the absence of adequate management. Infection occurs when wounds or animal bites are infected with tetanus spores. Between 2014 and 2019, there were seven neonatal tetanus cases in South Africa (two in 2014, two in 2015, one in 2017, and two in 2019) (historic data courtesy of WHO).

Tetanus can be prevented by the administration of tetanus toxoid, which induces specific antitoxins. To prevent maternal and neonatal tetanus, tetanus toxoid needs to be administered to the mother before or during pregnancy, and delivery has to take place under hygienic conditions. In addition, the care of the umbilical cord needs to be appropriate. Neonatal tetanus, which is mostly fatal, was previously common in rural areas where home deliveries were frequent.

South Africa is considered to have eliminated maternal and neonatal tetanus in 2002. A country is certified as having eliminated neonatal tetanus if there is <1 case per 1 000 live births in every district per year. The rate of neonatal tetanus in South Africa remains below this threshold.

Article source: Centre for Vaccines and Immunology, NICD-NHLS; melindas@nicd.ac.za

INTERNATIONAL OUTBREAKS OF IMPORTANCE

An update on the novel coronavirus disease 2019 outbreak, South Africa

Demographic and clinical characteristics of the first 428 persons under investigation for coronavirus disease 2019, 22 January – 8 March 2020, South Africa

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was confirmed as the causative agent of coronavirus disease 2019 (COVID-19), and was initially detected in Wuhan City, China. In South Africa, a national preparedness and response plan, including early case detection by laboratory testing, was initiated on 22 January 2020. The first case of COVID-19 was confirmed in early March 2020. President Cyril Ramaphosa subsequently declared the COVID-19 outbreak a national disaster on 28 March 2020 and immediately implemented travel restrictions from countries classified by the World Health Organization (WHO) as high risk. A nation-wide lockdown started on 26 March 2020 and was extended by an additional two weeks to 30 April 2020. Here we present preliminary data on the first 428 persons under investigation (PUI) for COVID-19 for the period 22 January to 8 March 2020.

Individuals meeting the PUI criteria had an acute respiratory illness (ARI) and had either travelled to Wuhan/mainland China, had close contact with a confirmed case or were exposed to patients with severe ARI as healthcare workers. The PUI definition was updated on 3 February 2020 to include a travel history to areas with ongoing community transmission of COVID-19. Combined nasopharyngeal/oropharyngeal swabs in universal transport medium, accompanied by specimen collection and PUI forms, were submitted to the National Institute for Communicable Diseases. Specimens were tested using a reverse-transcriptase polymerase chain reaction (RT-PCR) assay.

Of the 428 PUIs tested from 22 January to 8 March 2020 (Figure 2), the majority were aged 30-39 years (23%, 98/428), and 51% (217/428) were males. Most were from Gauteng (46%, 195/428), Western Cape (23%, 100/428) and KwaZulu-Natal (19%, 79/428) provinces. Data on self-reported symptoms were collected at the time of specimen collection. These included cough (54%, 229/428), sore throat (52%, 224/428) and fever (23%, 99/428). Among 281 PUIs with available data, 88% (247/281) were outpatients and 12% (34/281) were admitted to hospital at the time of specimen collection. Based on available laboratory information (332/428, 78%), most specimens were submitted from the private sector (243/332, 73%). This is a reflection of the PUI definition, health-seeking behaviour of international travellers and the epidemiologic links of the first South African cases to epidemics in European countries. Among 428 PUIs who were tested for COVID-19, 31% (98/316) had a travel history to China, 17% (52/316) to Italy and 4% (17/316) to the United Arab Emirates (UAE) (Table 1).

During the reporting period, eight (2%) PUIs tested positive for SARS-CoV-2 and seven (2%) had inconclusive results owing to poor sample quality (human DNA was not detected). The index case patient, from KwaZulu-Natal, travelled to Italy and was part of a group of 10 people. Six other confirmed case patients were epidemiologically linked to the index case (one (from KwaZulu-Natal) was a close contact and five (one from Gauteng and four from KwaZulu-Natal) had travelled to Italy with the index case). The eighth case patient (from Gauteng) had travelled to the UAE. Among the eight positive cases, two case patients displayed symptoms upon first specimen collection; however, all were symptomatic upon the second and third specimen collection (within the month of March, one to three weeks after the first specimen collection). One case was hospitalised and there were no deaths.

Table 1. Demographic and clinical characteristics of persons under investigation for COVID-19, 22 January – 8 March 2020, South Africa.

	Overall n/N (%)
Age group (years)	
0-9	23/428 (5.4)
10-19	14/428 (3.3)
20-29	91/428 (21.3)
30-39	98/428 (22.9)
40-49	82/428 (19.2)
50-59	56/428 (13.1)
60-69	43/428 (10.0)
70-79	20/428 (4.7)
≥80	1/428 (0.2)
Male sex	217/428 (50.7)
Province	
Eastern Cape	18/428 (4.2)
Free State	9/428 (2.1)
Gauteng	195/428 (45.6)
KwaZulu-Natal	79/428 (18.5)
Limpopo	8/428 (1.9)
Mpumalanga	8/428 (1.9)
North West	5/428 (1.2)
Northern Cape	6/428 (1.4)
Western Cape	100/428 (23.4)
Signs and symptoms at time of specimen collection	
Fever	99/428 (23.1)
Sore throat	224/428 (52.3)
Cough	229/428 (53.5)
Headache	80/428 (18.7)
Shortness of breath	68/428 (15.9)
Diarrhoea	25/428 (5.8)
Vomiting	16/428 (3.7)
Location at time of specimen collection	
Inpatient admitted to ICU	10/281 (3.6)
Inpatient not admitted to ICU	24/281 (8.5)
Outpatient	247/281 (87.9)
Laboratory sector	
Private	243/332 (73.2)
Public	89/332 (26.8)
Travel history	
China	98/428 (22.9)
Italy	52/428 (12.1)
United Arab Emirates	17/428 (4.0)
Germany	13/428 (3.0)
United Kingdom	15/428 (3.5)
Other*	121/428 (28.3)
No travel	112/428 (26.2)

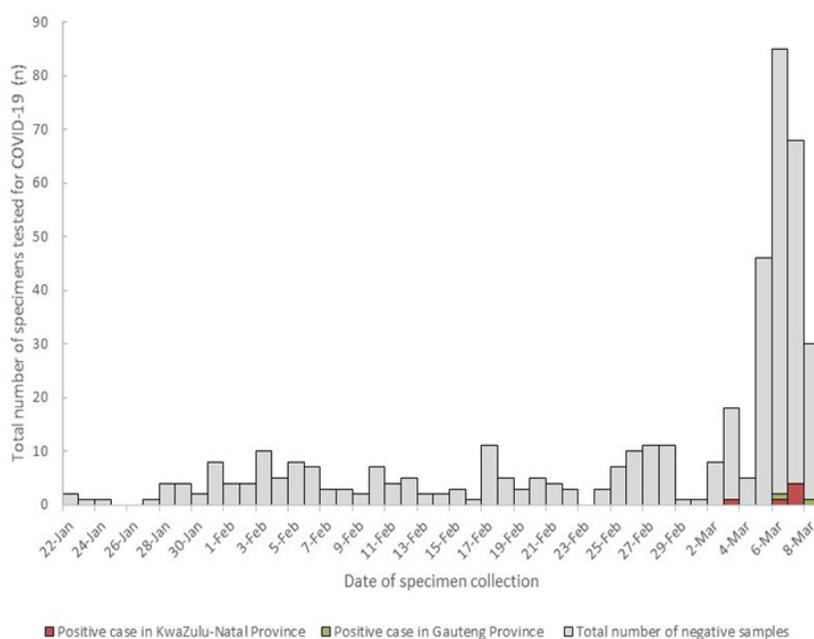


Figure 2. Epidemic curve of persons under investigation for COVID-19 by date of specimen collection, 22 January – 8 March 2020, South Africa.

*Other countries include: Australia, Bali, Belgium, Botswana, Brazil, Bulgaria, Egypt, France, Georgia, Germany, India, Iran, Ireland, Israel, Ivory Coast, Japan, South Korea, Kuwait, Malaysia, Mauritius, Mozambique, Myanmar, New Zealand, Nigeria, Pakistan, Portugal, Qatar, Romania, Saudi Arabia, Scotland, Singapore, Spain, Sri Lanka, Switzerland, Thailand, Turkey, United States of America, Ukraine, Vietnam & Zimbabwe.

Article source: COVID-19 response team; cheryl@nicd.ac.za

An update on Ebola virus disease outbreak, Democratic Republic of Congo

The Ebola virus disease (EVD) outbreak in northeast Democratic Republic of the Congo (DRC) still remains a serious public health concern internationally since the outbreak was declared on 1 August 2018. From 13 to 19 April 2020, four new confirmed cases of EVD were reported in the DRC, all from Beni Health Zone in North Kivu Province. Three out of these four cases were registered as contacts, though none were regularly followed by the response team because of insecurity and ongoing challenges with community reticence.

In total, six cases have been reported since 10 April, four of whom have died. Currently, there is one confirmed case receiving care at an Ebola treatment centre and one who remains in the community; response teams are engaging with the community in order to address this. Prior to the emergence of this cluster in Beni, the last person confirmed to have EVD tested negative twice and was discharged from a treatment centre on 3 March 2020.

As of 19 April 2020, a total of 3 461 EVD cases, including 3 316 confirmed and 145 probable has been reported, of which 2 279 cases died (overall case fatality ratio 66%). Of the total confirmed and probable cases, 56% (1 943) were female, 28% (983) were children aged less than 18 years, and 5% (171) were healthcare workers.

From 13 to 19 April 2020, an average of 1 894 alerts were reported and investigated per day. Of these, an average of 187 alerts were validated

as suspected cases each day. The alert rate has decreased and remains suboptimal in the past three weeks as teams are pulled into other emergencies, including coronavirus disease 2019 (COVID-19). During this same period, 1 030 samples were tested, including 583 blood samples from alive, suspected cases; 267 swabs from community deaths; and 180 samples from re-tested patients. Overall, laboratory activities increased by 6% compared to the previous week.

Over 249 000 contacts have been registered since the beginning of the outbreak. A total of 638 contacts of the six new cases since 10 April have been registered, of which 476 were followed on 19 April 2020. A total of 346 of these contacts have been vaccinated. As of 19 April, 25% of contacts have not been followed due to insecurity and ongoing challenges in the with community. Ebola treatment centres (ETCs), transit centres (TCs), and decentralised transit centres continue to operate across outbreak affected areas, providing timely care and diagnoses for suspected EVD cases.

As of 19 April 2020, 196 people received the rVSV-ZEBOC-GP vaccine in Kasanga Health Area, Beni Health Zone, in the past week, bringing the total number of people vaccinated since August 2018 to 301 978. While approximately 6 000 doses are available in Beni Health Zone, WHO anticipates potential longer-term challenges with the vaccine pipeline due to limited

flight ability as a result of the COVID-19 pandemic.

Under the overall leadership of the Government of the DRC in support of the Ministry of Health, WHO is supporting public health operations and regional preparedness as outlined in the Strategic Response Plan. WHO still advises against any restriction of travel to, and trade with, the DRC based on the currently available information. WHO continues to closely monitor and, if necessary, verify travel and trade measures in relation to this event. Travellers should seek medical advice before travel and should practice good hygiene.

The new confirmed cases were identified 40 days after the last person tested negative and was discharged from care; however, this is not unexpected. The WHO recommended criteria for declaring the end of the EVD outbreak includes a 42-day waiting period because undetected chains of transmission or new flare-ups may arise. It is essential to remain vigilant and maintain appropriate levels of surveillance to rapidly detect and respond to relapse, re-introduction or new emergence events, so as to implement effective control measures, as well as continue to engage community leaders to address or mitigate community mistrust in affected areas.

As of 28 April 2020, there are no EVD cases reported 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.

Article source: WHO: www.who.int; WHO-AFRO, Division of Public Health Surveillance and Response, NICD-NHLS; outbreak@nicd.ac.za

SEASONAL DISEASES

Malaria notification data, March 2020

A total of 904 malaria cases was notified through the National Notifiable Medical Conditions Surveillance System (NMCSS) for the month of March 2020. This represents a 30% decrease in malaria cases compared to March 2019. Of the 904 notified cases, 191 reports were excluded from further analysis due to missing data (59) or being identified as a duplicate report (132). In contrast to February 2020, the majority of the 713 remaining cases reported in March 2020 were from endemic districts (55%, 390/713). The endemic districts in Limpopo Province accounted for 81% (314/390) of the malaria burden in endemic districts and 57% (39/69) of all notified cases of malaria in children under the age of five. While males (61%, 429/707), predominately between the ages of 20 and 40 years, were the most affected by malaria, their malaria risk was higher in non-endemic districts (67%, 215/320) compared to endemic districts (55%, 214/387). Microscopic examination of blood smears remains the

main method of diagnosis (92%, 656/713) for cases captured by the NMCSS. Although IV artesunate was used to treat 85% (64/75) of the severe malaria patients, health facilities predominately from non-endemic districts (64%, 7/11) continue to use IV quinine. While it was encouraging to note the marked decrease in malaria importation from neighbouring Mozambique, it is of some concern that Limpopo Province reported only locally-acquired cases. Important: Note that these data do not reflect the country's total burden of malaria disease, as most malaria-endemic districts are currently using alternative malaria case recording systems, such as the District Health Information System 2 (DHIS2).

Article source: Centre for Emerging Zoonotic and Parasitic Diseases and the Notifiable Medical Conditions Surveillance System, NICD-NHLS; johnf@nicd.ac.za

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 9.

1. Yellow fever: South Sudan

On 3 March 2020, the Ministry of Health of South Sudan reported two presumptive positive cases of yellow fever in Kajo Keni County, Central Equatoria State, South Sudan. Both cases were subsequently confirmed positive by plaque reduction neutralisation testing (PRNT) at the regional reference laboratory in Uganda on 28 March 2020.

The cases were identified through a cross-border rapid response team investigation mounted in response

to the recently declared outbreak in the bordering Moyo District, Uganda. During the investigation, the team collected 41 blood samples from five villages bordering Moyo District.

South Sudan rapidly mounted an in-depth multidisciplinary investigation in Kajo Keji County in response to the cross-border notification of the outbreak in Moyo District. The investigations included enhanced surveillance, active case finding and entomological

surveys from 12-18 February 2020, supported by WHO Country Office and Headquarters. Surveillance has been enhanced within the context of integrated disease surveillance and response (IDSR) through training of healthcare workers and disseminating yellow fever case definition to health facilities to enhance case detection and reporting. The Ministry of Health, with support from the WHO Country office, has planned a reactive vaccination campaign in Kajo Keji County for which an International Coordination Group (ICG) request has been

submitted. The Ministry of Health has also proposed implementation of preventive mass vaccination campaigns, and introduction of yellow fever vaccination into the routine immunisation schedule by 2022.

Vaccination is the primary means of prevention and control of yellow fever. It provides immunity for life. In urban centres, targeted vector control measures are also helpful to interrupt transmission. Expedited planning and implementation of the vaccination campaign activities to protect the population will help avert risk of future outbreaks.

2. Malaria: Namibia

The ministry of health in Kavango West and Kavango East regions, Namibia, has reported about 827 malaria cases for the period 01 January to 03 April 2020, four times that of last year. In 2019, the two Kavango regions had less than 200 combined cases. Although the numbers have increased, an outbreak has not been declared. The low rainfall the region experienced in 2019 may explain the lower number of malaria cases for that year.

Malaria is endemic in the Kavango regions. According to the WHO's 2019 World Malaria Report, the annual incidence is around 200 to 300 cases per 1 000 population.

To stop the increase of malaria cases, vector control (including indoor residual spraying), with case detection and management, as well as continuous health education in communities, are some of the activities being conducted. Communities are also being encouraged to use mosquito repellents to curb the spread of disease.

3. Lassa fever: Nigeria

In Nigeria, in week 14 (30 March – 05 April 2020), there were 12 new Lassa fever (LF) confirmed cases. These were reported from five States (Edo, Ondo, Ebonyi, Bauchi and Sokoto). The number of new cases is down from 19 in week 13, indicating that LF virus transmission is continuing but declining considerably.

Cumulatively from week 1 to week 14, 2020, 188 deaths have been reported, with a case fatality rate (CFR) of 19.5%, which is lower than the CFR for the same period in 2019 (22.7%). Of all confirmed cases, 72% are from Edo (32%), Ondo (32%) and Ebonyi (8%) states. The predominant age group affected is 21-30 years (median 33 years). The male to female ratio for confirmed cases is 1:1.2. No new healthcare worker was affected in reporting week 14.

The National Emergency Operations Centre (EOC) in Nigeria has been activated to coordinate response activities across states. The states with confirmed cases have activated state-level EOCs. Surge staff (doctors, nurses, laboratorians, and hygienist) have been deployed. In addition, risk communications and community engagement activities have been scaled up across states using television, radio, print, social media, and other strategies.

4. Measles: Democratic Republic of Congo, Mexico and Liberia

The Democratic Republic of the Congo (DRC)'s healthcare system needs urgent support as it struggles with measles and cholera epidemics that kill thousands of children, as well as the mounting threat from the coronavirus disease 2019 (COVID-19) outbreak. Measles cases surged in 2019 – 2020 to reach 332 000 nationwide, making it the worst outbreak in the DRC's

history. Out of more than 6 200 recorded fatalities, around 85% were children under the age of five.

Mexico is also experiencing a measles outbreak. Between 1 January and 2 April 2020, 1 364 probable cases of measles were reported, of which 124 were laboratory confirmed, 991 were discarded, and 328 remain under investigation. The age of the confirmed measles cases ranged from 3 months to 68 years (median of 20 years), and 59% were male. Analysis conducted by the National Reference Laboratory (InDRE) identified the genotype D8 (similar to other countries in the region) for 17 of the confirmed cases. Of the 124 confirmed cases, 105 were in Mexico City, 18 in Mexico State, and one in Campeche State.

Amid the outbreak of coronavirus in Liberia, there is also a report of an outbreak of measles in two districts of Nimba County. The Ministry of Health has begun a routine vaccination campaign in the affected areas. The number of cases has not been reported.

A statement from the Measles & Rubella Initiative indicates that the COVID-19 pandemic could cause dozens of measles immunisation campaigns worldwide to be postponed or suspended. The initiative estimates that more than 117 million children in 37 countries could be at risk of missing their measles vaccinations as a result. In its statement, the initiative pointed to interim guidance (https://apps.who.int/iris/bitstream/handle/10665/331590/WHO-2019-nCoV-immunization_services-2020.1-eng.pdf) the WHO issued in March 2020 that states immunisation is a core health service that should be prioritised to prevent communicable diseases and that immunisation services should continue to be provided wherever they can be performed safely.



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.

Article source: Promed (www.promed.org), World Health Organization (www.who.int)

WHO-AFRO: OUTBREAKS AND EMERGENCIES

WEEKLY BULLETIN ON OUTBREAKS AND OTHER EMERGENCIES

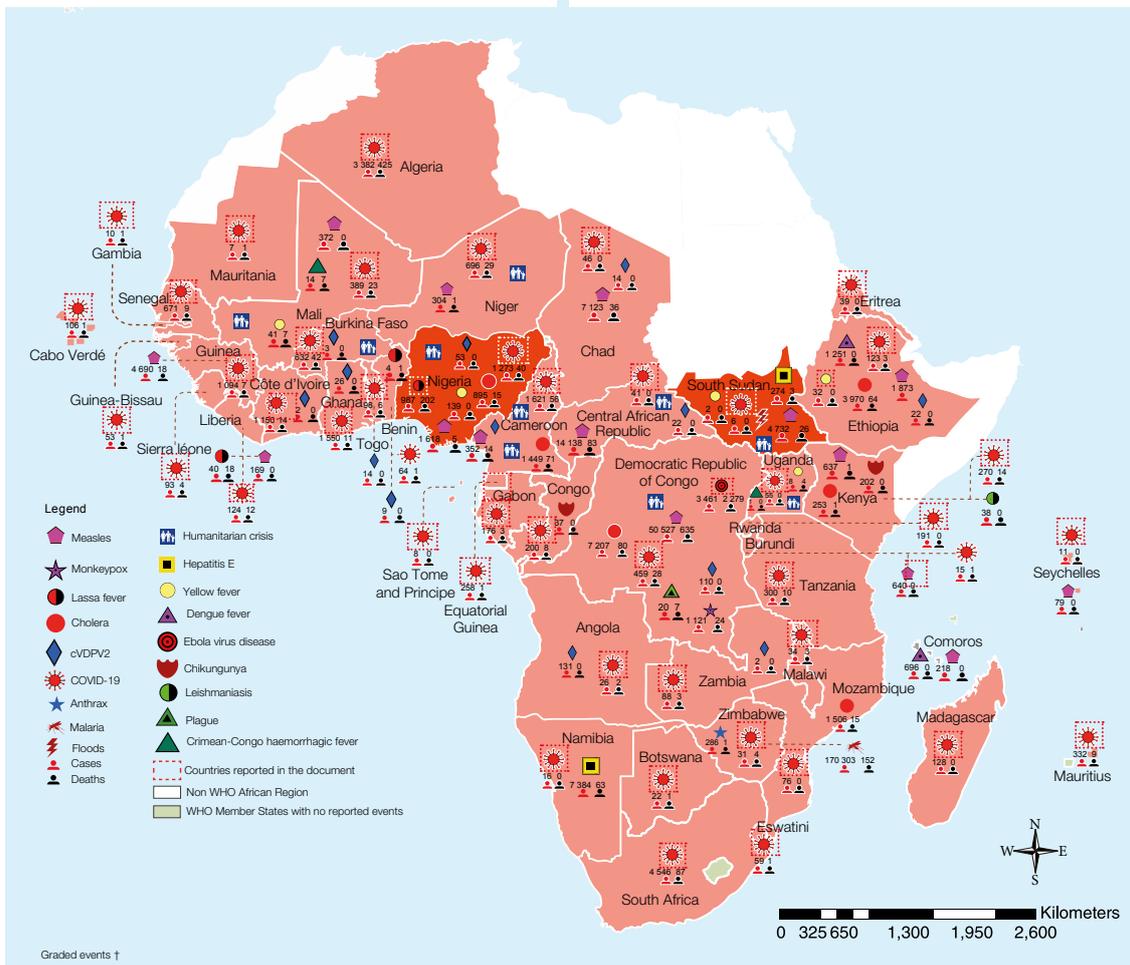
Week 17: 20 - 26 April 2020
Data as reported by: 17:00; 26 April 2020



World Health Organization
REGIONAL OFFICE FOR **Africa**
WHO Health Emergencies Programme

1
108
98
11

New event
Ongoing events
Outbreaks
Humanitarian crises



<b style="font-size: 1.5em;">48 Grade 3 events	<b style="font-size: 1.5em;">14 Grade 2 events	<b style="font-size: 1.5em;">1 Grade 1 events	<b style="font-size: 2em;">39 Ungraded events
<b style="font-size: 1.5em;">2 Protracted 3 events	<b style="font-size: 1.5em;">2 Protracted 2 events	<b style="font-size: 1.5em;">3 Protracted 1 events	

Health Emergency Information and Risk Assessment

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 108 events. For more information click the link <https://apps.who.int/iris/bitstream/handle/10665/331892/OEW17-2026042020.pdf>

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