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Editor's Note



Dr Michelle Groome

We recently commemorated the first COVID-19 case detected in South Africa. A year ago, few would have predicted the tremendous impact that the COVID-19 pandemic has had on all of our lives. We have been able to reflect on lessons learnt during the past year and focus has shifted onto how we can best predict and respond to a possible third wave of COVID-19 infections. Our frontline healthcare workers are steadily being vaccinated, with plans for upscaling of the vaccine programme over the coming months.

Global influenza activity remains lower than expected, most likely due to non-pharmaceutical interventions implemented to reduce severe acute respiratory syndrome coronavirus 2 transmission. The first case of influenza in 2021 was detected through the NICD sentinel site pneumonia surveillance programme at the beginning of March, and influenza vaccine will be available later this month, with those at increased risk for severe influenza-associated complications being prioritised. We provide guidance on administration of both the influenza and COVID-19 vaccines.

This month we provide an update on respiratory syncytial virus (RSV) infections over the past year. With relaxation of the lockdown restrictions, RSV infections may start increasing and clinicians are reminded to consider RSV in differential diagnoses for severe respiratory illness, especially in young children.

The recent high rainfall means that visitors to malaria-endemic areas need to increase their awareness of malaria and use the recommended preventative measures. Overlap in clinical presentation between malaria and COVID-19 may lead to delays in malaria diagnosis, so remember to ask about travel history and consider malaria in your differential diagnosis. Another case of human rabies has been identified in a child in Limpopo Province. Rabies can be prevented with post-exposure prophylaxis, but this needs to be given as soon as possible after the exposure.

The outbreaks of Ebola virus disease in the Democratic Republic of the Congo and Guinea are ongoing, and we provide an update on case numbers and the challenges faced in containing these outbreaks. While there are currently no suspected or reported cases of Ebola virus disease within South Africa, we need to continue to monitor this and other outbreaks beyond our borders.

ZOONOTIC AND VECTOR-BORNE DISEASES**An update on rabies in South Africa**

A case of human rabies was confirmed from Limpopo Province in March 2021. The case involved a 7-year-old boy who was admitted to hospital, unable to walk or eat, with progressive paralysis, and experiencing confusion and hallucinations. He had been bitten by a dog two months earlier in Thohoyandou, Vhembe District. Rabies virus was detected using RT-PCR on a saliva sample collected from the child. This is the second confirmed human rabies case in South Africa for 2021 to date. The other case was reported from Kwazulu-Natal Province.

Rabies deaths can be prevented with post-exposure prophylaxis. This involves wound cleaning, rabies vaccination, and direct wound infiltration with rabies immunoglobulin (RIG) if indicated. Please visit the NICD website for more information on rabies and disease prevention: <https://www.nicd.ac.za/diseases-a-z-index/rabies/>

Exposure to aardwolf

In March 2021, a visitor to a farm in De Aar, Northern Cape Province, was exposed to a suspected rabid aardwolf (*Proteles cristata*). Aardwolf is a small, insectivorous mammal native to South Africa, and is infrequently encountered by humans. Rabies was confirmed in a bat-eared fox from the same farm prior to this event. The case sustained a small wound, but since the skin was breached, required both rabies vaccination and RIG to be administered, but only vaccination was started post-exposure in this case. The case was reviewed and RIG provided five days after vaccination was started. RIG has to be infiltrated in the wound, or wound sites, regardless of the size or dispersion of the wound/s. RIG is critical to achieve neutralization of the virus at the wound site, whilst the body mounts response to vaccination.

INTERNATIONAL OUTBREAKS OF IMPORTANCE

An update on Ebola virus disease outbreak, DRC and Guinea

In the Democratic Republic of Congo (DRC), the Ebola virus disease (EVD) outbreak in North Kivu is ongoing, although no new cases have been confirmed over the last 13 consecutive days. In Biena health zone, the contact who became a suspected case on day 16, has tested negative and is awaiting a second sample test result while remaining in isolation.

As of 14 March 2021, a total of 12 cases (11 confirmed and one probable), and five deaths (case fatality ratio 45.5%) has occurred. Two of the confirmed cases are healthcare workers. Two confirmed EVD cases are still undergoing treatment, while 34 suspect cases are being monitored in isolation facilities. Four cases have recovered and have been discharged.

Since the beginning of the outbreak, a total of 345 contacts has been established, 286 (83.0%) of whom were followed-up. One-hundred-and-twenty (34.8%) and 225 (65.2%) of these contacts are in their second and third respective weeks of follow-up.

A total of 416 alerts has been raised, of which 411 were investigated (96.0%), and 95 were verified as true, including 72 alive alerts and 23 deaths. Since the start of the epidemic, 1 590 laboratory samples have been analysed, of which 11 (0.7%) have tested positive for EVD.

As of 14 March 2021, a total of 1 515 people has been vaccinated; including 135 contacts, 450 contacts of contacts and 930 probable contacts. Of the 1 515 persons vaccinated, 866 (57.2%) are in Biena, 290 (19.1%) in Butembo and 51 (3.4%) in Musienene health zones. Ring vaccination in Butembo health zone has been suspended following security threats. Screening of travellers at entry points to the country continues.

The ongoing EVD outbreak remains a serious concern, with challenges around the response, including low number of alerts in other affected and at-risk health zones, contacts refusing vaccination and other contacts remaining unseen. EVD awareness needs strengthening by authorities in order to support community activities including vaccination, alert notification and contact follow-up; and mobilise resources to support the response.

Meanwhile, the EVD outbreak in Guinea continues since its declaration on 14 February 2021. As of 13 March 2021, a total of 18 cases (14 confirmed and 4 probable) and nine deaths

(case fatality ratio 50.0%) has been reported. Currently, only one health district remains active (reporting at least one confirmed case) and two health districts out of 38 are on alert (have at least one contact).

Five of the confirmed EVD cases in Guinea are healthcare workers. Three patients (all confirmed cases) are currently hospitalised in the Epidemic Diseases Treatment Centre in the country's N'Zerekore city.

Out of 368 contacts, 341 (93.0%) are being followed up. Five contacts have migrated, four are within Guinea (Conakry, Dinguiraye, Tougue and Yomou) and one outside Guinea (in the country of Côte d'Ivoire), are being actively traced.

A total of 3 332 people has been vaccinated, including 288 high-risk contacts, 2 602 contacts-of-contacts, 442 probable contacts.

Training and deployment of local agents to strengthen active case finding is ongoing. Case management in affected regions is being supported by partners, and safe and dignified burial teams are being trained by the Red Cross.

The EVD outbreak in Butembo, North Kivu, DRC, remains confined to three health zones; however, challenges remain with community resistance, community surveillance, contact follow-up, safe and dignified burial practices, as well as poor communication, logistics and inadequate funding in affected areas. Guinea authorities are faced with similar challenges.

During the largest EVD outbreak, the West Africa Ebola outbreak 2014-2016, Guinea was one of the three most affected countries. EVD re-emergence is of grave concern. Although health teams have acted rapidly in the country to trace the pathway of the virus and curb infection, challenges still remain around unsafe burials, poor infection prevention and control measures, and a lack of Ebola rapid detection tests at hospitals in the area. There is an urgent need for national authorities and partners to address shortfalls in response activities and ensure rapid containment of the outbreak.

As of 24 March 2021, there are no EVD cases reported in South Africa associated with the current outbreak in the DRC and Guinea. In addition, there are no suspected cases of EVD in South Africa at present.

SEASONAL DISEASES

Influenza, 2021

Globally, despite continued or even increased testing for influenza in some countries, influenza activity remains at lower levels than expected during the pandemic period.

In the NICD sentinel site pneumonia surveillance programme, the first influenza detection, influenza A(H3N2), in 2021 was made from a specimen collected on 5 March (epidemiologic week 9) from a 21-year-old male from the Western Cape Province with no history of travel. The average onset of the influenza season over the years 2005 to 2019 has been week

20 (mid-May), ranging from the end of April to mid-June. Other than a localised outbreak of influenza in the first three months of 2020, only one detection of influenza was made through routine surveillance during the winter months of 2020 (Figure 1). The various non-pharmaceutical interventions including a lockdown, masks, hygiene, physical distancing and limited intra- and inter-country travel, implemented to reduce severe acute respiratory syndrome coronavirus 2 (SARS-CoV2) transmission, most likely contributed to this.

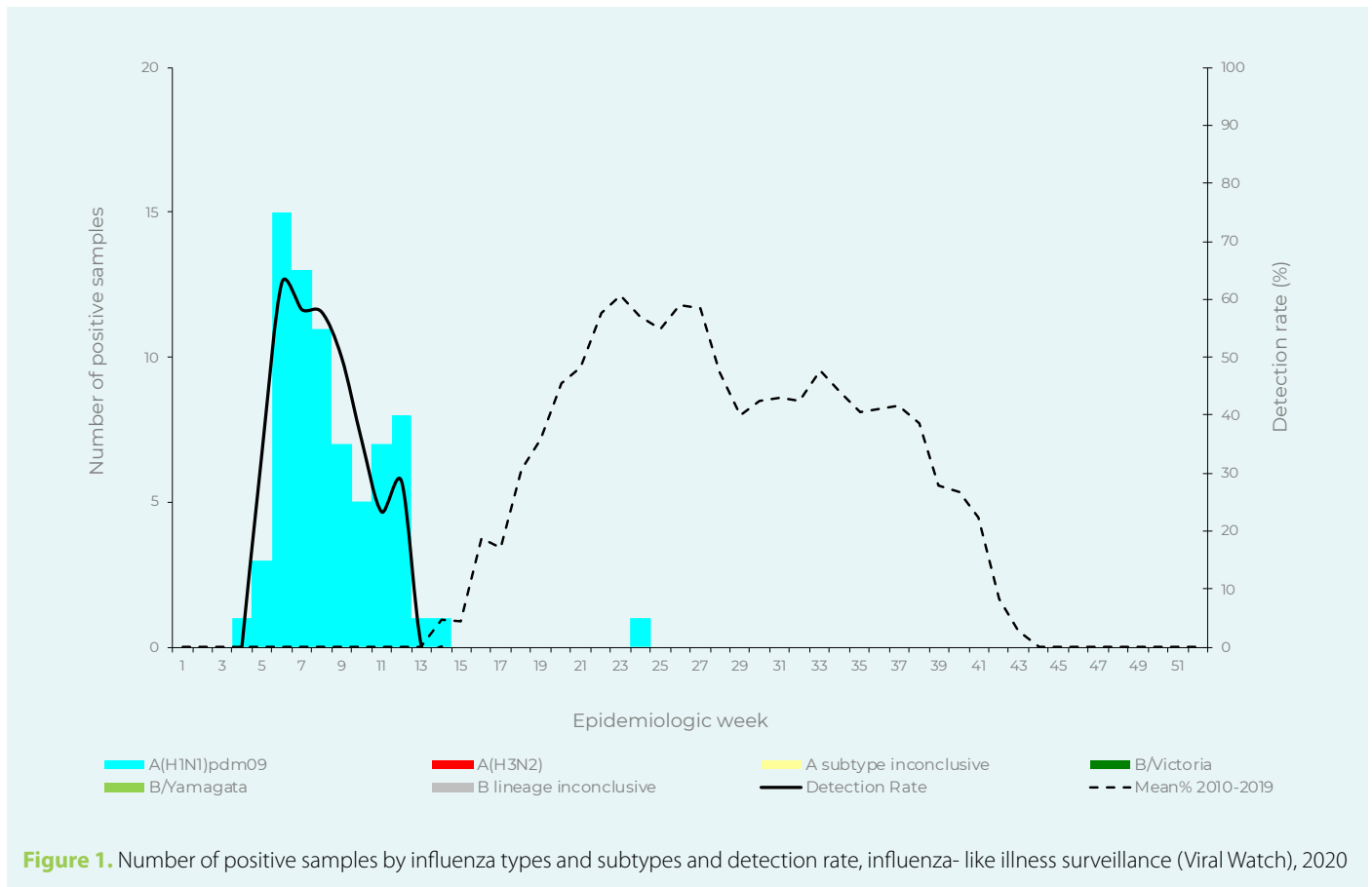


Figure 1. Number of positive samples by influenza types and subtypes and detection rate, influenza- like illness surveillance (Viral Watch), 2020

Influenza vaccine will be available later this month and the strain recommendations for 2021 are:

- an A/Victoria/2570/2019 (H1N1)pdm09-like virus;
- an A/Hong Kong/2671/2019 (H3N2)-like virus;
- a B/Washington/02/2019 (B/Victoria lineage)-like virus; and
- a B/Phuket/3073/2013 (B/Yamagata lineage)-like virus*.

*Note: Trivalent vaccine will not include the B/Yamagata lineage. The quadrivalent vaccine will be available in the private sector as well as limited numbers in the public sector. Healthcare workers are encouraged to discuss influenza vaccination with their patients, especially among those who are at increased risk for severe influenza-associated complications.

SEASONAL DISEASES

Individuals prioritised for influenza vaccination through the government-funded vaccination programme include the following groups:

- all health care workers;
- individuals aged >65 years;
- individuals with cardiovascular disease (including chronic heart disease, hypertension, stroke and diabetes), chronic lung disease (including asthma and chronic obstructive pulmonary disease) and individuals living with HIV and AIDS
- pregnant women

Influenza vaccination and SARS-CoV-2 vaccine

As there are no immunogenicity or safety data for co-administration of SARS-CoV-2 and influenza vaccines, co-administration of influenza and COVID-19 vaccines on the same day is not recommended. Influenza and SARS-CoV-2 vaccines can be given ≥ 14 days apart. There is no particular requirement regarding the order of receiving the influenza vaccine and SARS-CoV-2 vaccine. However, those at higher risk of severe COVID-19 disease should receive SARS-CoV-2 vaccine before influenza vaccine.

Respiratory syncytial virus, 2021

The respiratory syncytial virus (RSV) season usually precedes the influenza season, starting between the beginning of February and mid-March, with the mean peak of the season in mid-April.

During 2020, the season appeared to be starting when lockdown started at the end of March (week 13). The proportion of RSV detections was however still below the 10-year mean at the time, and subsequently decreased, likely due to the mask use, physical distancing and other measures implemented to reduce SARS-CoV-2 virus transmission. After the relaxation of lockdown restrictions, the proportion of RSV detections increased again and was higher than the seasonal mean for the latter part of the year, but remained lower than levels reached during previous years (Figure 2). During the period of increased transmission, RSV detection breached the seasonal threshold between epidemiologic week 39 and 43 and again in week 51.

For the first eight weeks of 2021, the average RSV detection rate in the pneumonia surveillance programme with sites in five provinces was 12.0%, but has risen to 18.5% and 19.4% for weeks 9 and 10, respectively. In influenza-like illness surveillance in sentinel public health clinics in four provinces, the detection rate for week 10 is higher than that of the 10-year mean. However, the RSV detections in 2021 have not breached the seasonal threshold yet.

During 2020, RSV A accounted for 83% (455/546) of RSV detections made in the pneumonia surveillance programme, whereas in 2021 (to date) RSV B accounted for 55% (74/135) of RSV detections made.

Clinicians are reminded at this time of the year, to consider RSV in differential diagnoses for severe respiratory illness, especially in young children.

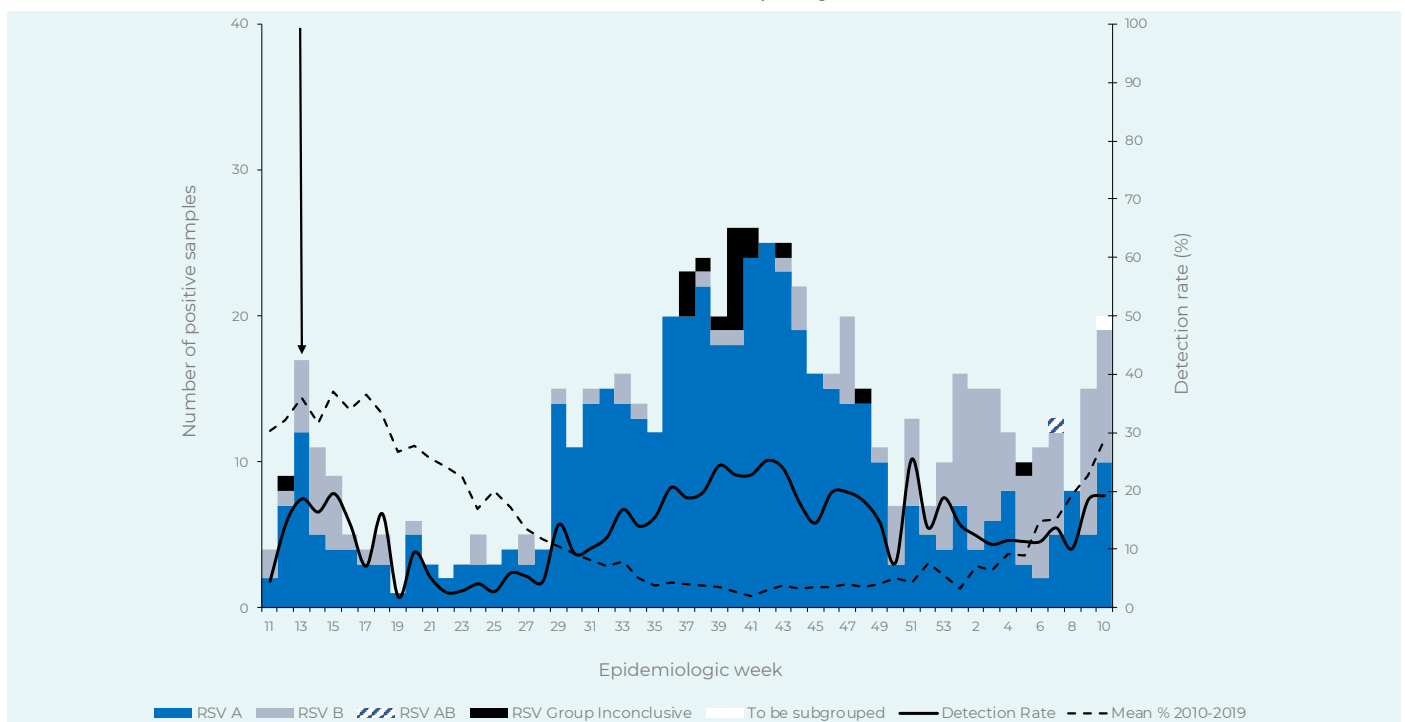


Figure 2. Pneumonia surveillance: RSV detections and detection rate among individuals of all ages at five sentinel sites, South Africa, 9 March 2020 to 14 March 2021 (Arrow indicates first week of lockdown)

SEASONAL DISEASES

Malaria

Heightened risk situation continues

The recent general high rainfall in the southern African region means continued increased risk of malaria transmission. Recent entomological surveillance data show that high numbers of malaria vector mosquitoes are being found in the malaria-endemic districts in South Africa, with a likely corresponding rise in malaria exposure risk in residents and visitors in these areas.

The easing of COVID-19 lockdown restrictions, both for internal and cross-border travel, coupled with this seasonally increased malaria incidence, means that local populations, visitors, and healthcare workers in malaria risk areas need to increase their awareness of malaria, and correspondingly apply the recommended malaria preventive measures. Concomitantly, travel-related imported cases in non-endemic metropolitan areas, particularly in Gauteng Province, are likely to increase. There is a high likelihood of a third wave of COVID-19 disease in

April, which is still within the usual malaria transmission season, with much Easter holiday travel involving malaria areas. The overlap in clinical presentation between malaria and COVID-19 has been emphasised on several occasions in the Communiqué (see NICD Communicable Disease Communiqué issues for September 2020 through February 2021). Missed or delayed recognition of malaria has the potential for serious illness or death. Any person presenting with fever and progressive 'flu-like symptoms who lives in, or has recently visited, a malaria-endemic area, should be checked for malaria, irrespective of pending or completed tests for SARS-CoV-2 infection. Occasionally, malaria vector mosquitoes may be accidentally transported to non-endemic areas and transmit the disease, a situation that typically leads to delayed diagnosis and serious disease, particularly while attention is so focused on COVID-19 (see NICD Communicable Disease Communiqué January 2021; Vol. 20 (1): 11).

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 8.

1. Lassa fever: Nigeria

A total of 1 211 suspected and 191 confirmed cases of Lassa fever had been reported in seven states across Nigeria by mid-March 2021 (epi week 10). The annual spike of case numbers from December to April has so far been less in 2021 than in previous years; but has already resulted in 42 deaths this year. 2020 saw a total of 1 189 confirmed cases and 244 deaths. This zoonotic infection caused by the Lassa virus is endemic to countries in West Africa including Nigeria. The national Lassa fever multi-partner, multi-sectoral Technical Working Group (TWG) continues to coordinate the response activities at all levels.

The Lassa virus is carried by a common rat species, *Mastomys natalensis*, and excreted in the urine and faeces. Ingestion of contaminated foods and drinks or direct contact between contaminated items and open skin lesions result in human infection. Transmission may also occur through inhalation of particles made airborne by activities such as sweeping; or through handling the rodent while preparing it to eat. Person-to-person transmission may occur through contact with body fluids of an infected individual.

80% of people infected with Lassa fever will undergo a mild disease course. Clinical symptoms occur within three weeks of infection, are non-specific and range from malaise, fever and

generalised weakness to multiple organ system involvement resulting in haemorrhage, respiratory distress and neurological disturbance. The case fatality ratio for people infected with the Lassa virus is 1%, with increased rates seen in pregnant women (third trimester) and those who are severe enough to require hospitalisation. However, Nigeria's case fatality ratio for 2019 and 2020 has been over 20%. A third of those infected will be affected by temporary or permanent hearing loss. Blood tests for polymerase chain reaction (PCR) is used for diagnosis; but the Lassa virus infection may also be detected through viral culture, antibodies and antigens.

In-hospital supportive therapy and early administration of the antiviral ribavirin are the mainstay of clinical management for Lassa fever. Prevention of animal-to-human transmission is of utmost importance through health promotion to enforce environmental health controls of 'community hygiene' in endemic areas. This entails good personal and household hygiene, namely hand-washing, keeping a clean home and washing and cooking food well; and discouraging rodents from entering homes by rodent-proofing foodstuffs and household waste, and having biological deterrents such as cats. Contact tracing is also employed to ensure prompt diagnosis and management.

2. Middle East Respiratory Syndrome (MERS): United Arab Emirates

A human case of the Middle East Respiratory Syndrome (MERS) has been reported in the United Arab Emirates, diagnosed in February 2021, the first case in the country since December 2019. Globally, by the end of 2020, 2 566 cases of MERS had been reported across 27 countries with 882 deaths. The majority of cases have been in the Kingdom of Saudi Arabia. This zoonotic disease is caused by the MERS-CoV, a coronavirus older than and distinct from the SARS-CoV-2 of the current COVID-19 pandemic.

MERS is widespread in dromedary (single-humped) camels in the Middle East and northern Africa. The disease in camels is mild and self-limiting with animals requiring an isolation period to overcome the infectious phase of disease. Most human infections have been linked to contact with camels, the first

human infection being found in 2012 in the Middle East (Jordan). Transmission to humans occurs through direct interaction with camels or through ingestion of raw/unpasteurised milk or urine, or uncooked meat. Transmission of MERS between humans is likely through respiratory secretions. While clusters of cases may be found, particularly within the healthcare setting, sustained human-to-human transmission has not been demonstrated, one of the key differences between MERS and COVID-19.

The clinical presentation is often mild with respiratory and gastrointestinal symptoms, but may progress to severe disease and death. The case fatality ratio of 35% is likely an overestimation due to the number of mild cases being higher but not detected by surveillance systems. Severe disease and

Source: Promed (www.promed.org), World Health Organization (www.who.int), Centres for Disease Control and Prevention (www.cdc.gov), Nigeria Centers for Disease Control (ncdc.gov.ng), World Organisation for Animal Health (oie.int), Food and Agriculture Organization for the United Nations (fao.org)

BEYOND OUR BORDERS

death are more likely in those with co-morbidities such as obesity, diabetes mellitus, chronic renal failure, chronic lung disease and immunocompromised states.

As there is no animal or human vaccine against infection with MERS-CoV, prevention strategies focus on hand hygiene and

avoiding touching the face following contact with camels; avoiding sick camels; correctly preparing animal products before consumption; personal protective equipment for occupational risks; avoiding camels if at higher risk for severe disease; and ongoing surveillance and outbreak response within the public human and animal health sectors.

3. Foodborne illness: India

It is estimated that one in ten people globally are affected by illness as a result of eating contaminated food each year. In mid-March, over 70 students within a single residence at the Osmania Medical College in India had developed symptoms of food poisoning, of whom 19 required hospitalisation. The suspected aetiology is a staphylococcal enterotoxin illness, norovirus or chemical contamination. India has reported multiple other outbreaks of foodborne disease this year involving food served at a government function and a dinner party, and consumption of the palm-based 'toddy' drink.

Foodborne illnesses are caused by ingestion of food contaminated with bacteria, viruses, fungi, parasites or chemical substances. The clinical course may be mild, with cases experiencing mild gastrointestinal symptoms of nausea, vomiting, abdominal cramps or diarrhoea, but may progress to severe complications and death. Longer-term illnesses

related to contaminated food, such as cancer, also fall within the spectrum of foodborne disease. Treatment of acute illness is supportive, focussed on restoring hydration and the electrolyte balance, but may also include specific treatment aimed at the offending agent and its complications. Foodborne disease is seen worldwide, but disproportionately affects children under 5 years of age and people in low- and middle-income countries.

Addressing foodborne disease is achieved through ensuring food safety protocols through all levels of the food production system. Basic safe food preparation techniques include keeping foodstuffs clean, separating raw and cooked foods, cooking foods thoroughly, keeping foods at safe temperatures, and ensuring that safe water and other materials are used. Outbreak response and surveillance to detect disease patterns and investigate the cause of disease assists to guide management of individual cases and to prevent similar outbreaks in future.



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.

Source: Promed (www.promed.org), World Health Organization (www.who.int), Centres for Disease Control and Prevention (www.cdc.gov), Nigeria Centers for Disease Control (ncdc.gov.ng), World Organisation for Animal Health (oie.int), Food and Agriculture Organization for the United Nations (fao.org) .gov)

WHO AFRO UPDATE

WEEKLY BULLETIN ON OUTBREAKS AND OTHER EMERGENCIES

Week 11: 8 - 14 March 2021
Data as reported by: 17:00; 14 March 2021

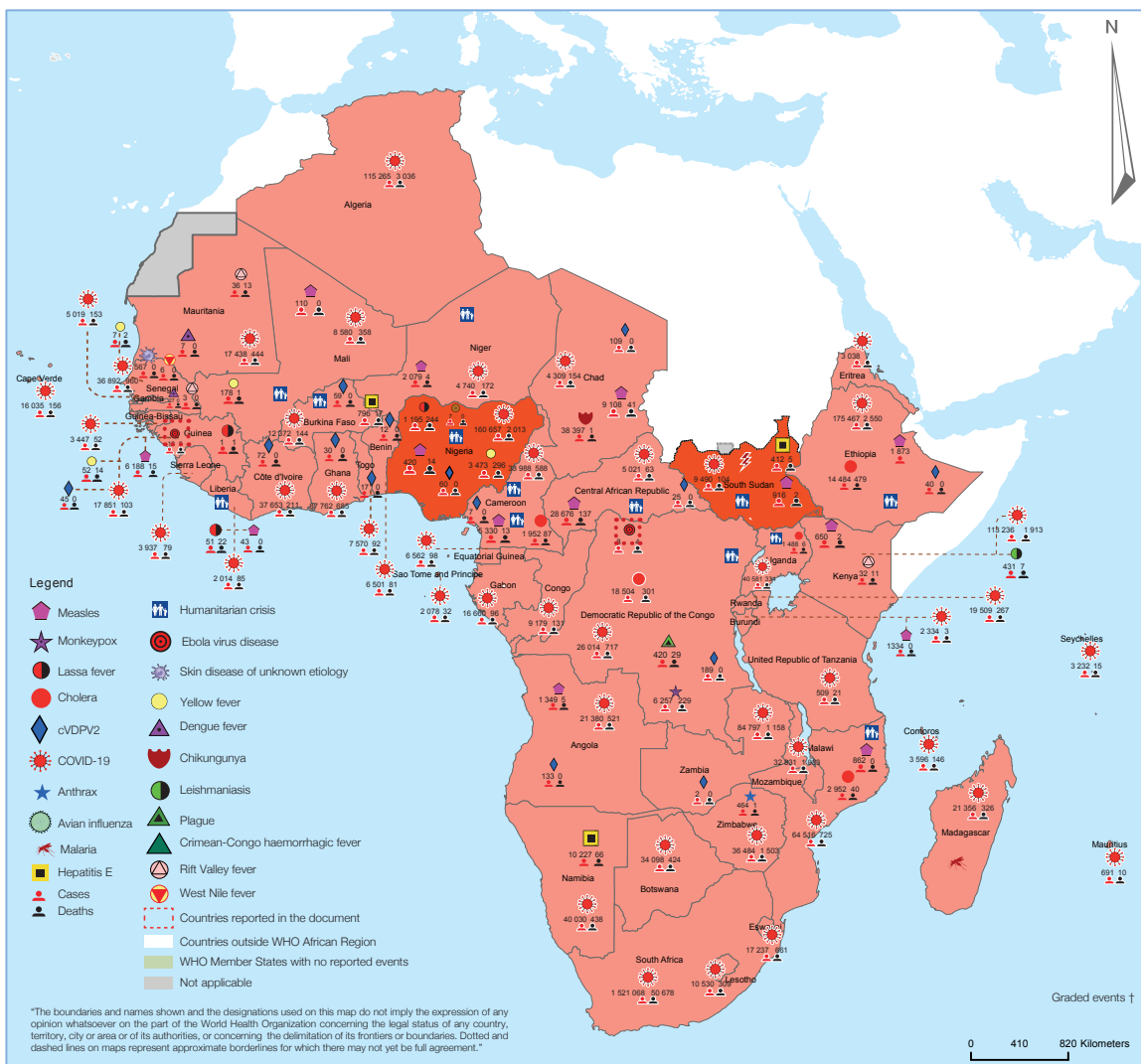


1 New event

117 Ongoing events

105 Outbreaks

13 Humanitarian crises



50 Grade 3 events	20 Grade 2 events	4 Grade 1 events	36 Ungraded events
2 Protracted 3 events	3 Protracted 2 events	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 117 events. For more information see link below: <https://apps.who.int/iris/bitstream/handle/10665/340188/OEW11-0814032021.pdf>

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Responsible Authority

National Institute for Communicable Diseases

Editing and Publishing

NICD Division of Public Health Surveillance and Response

NICD Communications Unit

Tel: 011 386 6400

Email: outbreak@nicd.ac.za

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