NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

COMMUNICABLE DISEASES

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COMMUNIQUÉ

CONTENTS

Editor's Note

Dr Michelle Groome

Best wishes to all our readers at the start of this new year!

We have weathered our fourth COVID-19 wave without increased restrictions and with far fewer hospitalisations and deaths compared to previous waves. A large proportion of our adult population has developed immunity against severe disease, either through natural infection and/or vaccination. Booster doses of the SARS-CoV-2 vaccines are being rolled out and we face the year with the hope that we might finally start seeing a return to some semblance of normality. However, the SARS-CoV-2 virus has proved to be a cunning foe, able to mutate in order to increase its transmissibility as well as evade some of our immune defences, so we are not totally out of the woods yet.

In this month's Communiqué we provide an update on COVID-19 infection in children and discuss how wastewater surveillance for SARS-CoV-2 can provide an early indicator of a resurgence. You can also find out more about the development of the improved electronic application for reporting notifiable medical conditions, which is now available on all platforms.

Rabies remains a concern, particularly in Eastern Cape, KwaZulu-Natal and Limpopo Provinces. A total of 19 confirmed human rabies cases was reported in 2021, so it's important to be familiar with the guidelines for pre- and post-exposure prophylaxis.

Keep in mind that the summer months bring warmer weather and increased rainfall which results in an increased risk of endemic arboviral disease, through exposure to mosquitoes and other arthropod vectors. Malaria cases also generally peak in January and February, so think of malaria as a possibility in patients with fever or flu-like illness and remember to ask about travel history. If you are traveling abroad, keep up to date on international diseases that may affect you by reading our regular 'Beyond our Borders' column.

NOTIFIABLE MEDICAL CONDITIONS (NMC) SURVEILLANCE SYSTEM

Uptake of the improved NMC App, South Africa

The Notifiable Medical Conditions (NMC) surveillance system is supported by an electronic application initially launched in April 2018. The overall NMC App utilization rate[1] from April 2018 to March 2020 was 45.7% (n=14 596/31 900). The highest monthly rate reported during this period was 81.4% (n=1 201/1 475) in March 2020, as the coronavirus disease (COVID-19) was spreading and declared a notifiable condition. This public health status required a flexible system to accommodate case reporting during a pandemic. Before the COVID-19 pandemic, the NMC App challenges were technical issues relating to the build of the system, slowness of the application on mobile and web platforms, and its rigidity.

These challenges led to the development of an improved application since May 2020. The NMC Reporting App was gradually introduced in provinces from December 2020. This App is now also available on App Gallery for Huawei (March 2021), and Apple Store for iOS devices (November 2021). To date, there are 13 668 NMC App users. Of these, 4 103 (30%) were registered and authorised on the improved App, and the remainder were migrated from the old NMC App. Evidence of acceptance of the improved App is an increase in new registrations and average number of active users by month with the commencement of each COVID-19 wave (Figure 1). The flexibility of the system was evident with the development of COVID-19, congenital syphilis, malaria, and tuberculosis case specifications without implications on the performance of the system.

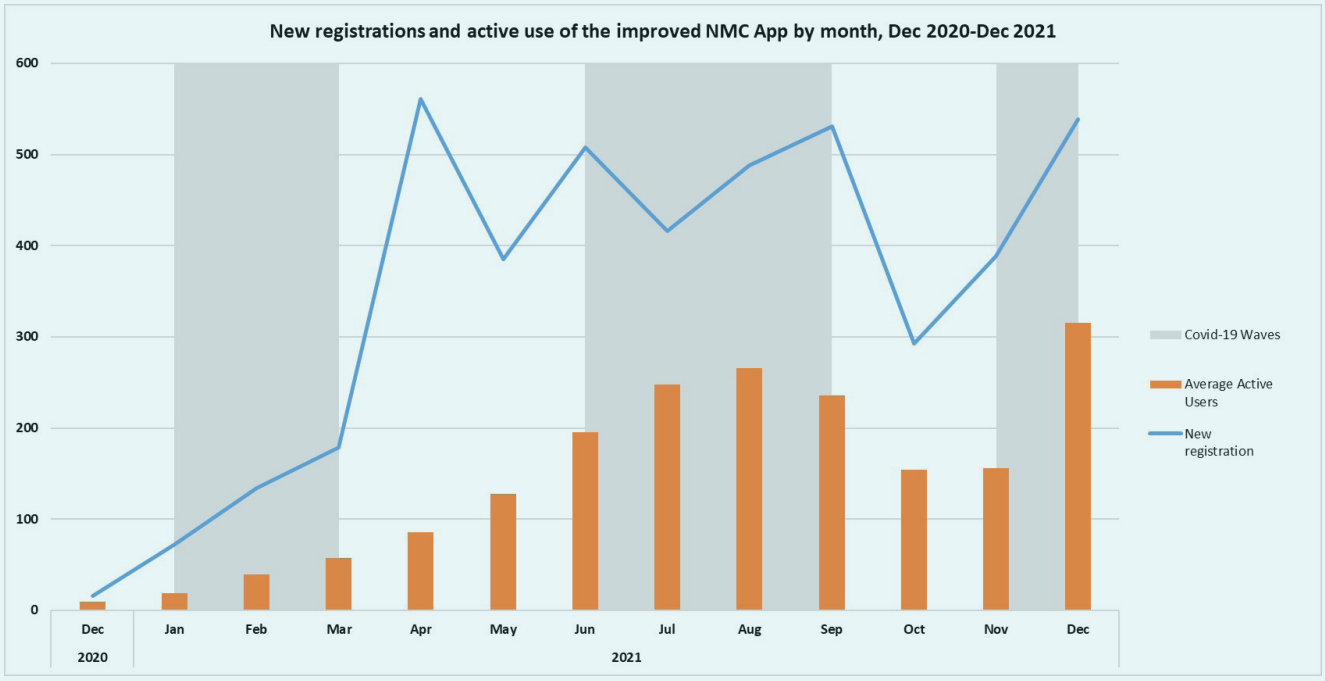

Figure 1. New Registrations on the improved NMC App, December 2020 to December 2021.

[1] Proportion of clinical notifications submitted by use of the NMC App

Source: Division of Public Health Surveillance and Response, NICD-NHLS; michelleg@nicd.ac.za

ZOONOTIC AND VECTOR-BORNE DISEASES

An update on rabies in South Africa

In January 2022, rabies was confirmed in a four-year-old child from the Eastern Cape Province. This is the first reported human case for the year. In addition, a case was confirmed as a patient who contracted the disease in Lusaka, Zambia but was hospitalized and died in Johannesburg. During 2021, a total of 19 confirmed human rabies cases was reported from Eastern Cape (n=9), KwaZulu-Natal (n= 6) and Limpopo (n=4) provinces (Figure 2).

The child from the Eastern Cape Province was bitten on the lip on 1 December 2021 by a dog she was playing with. The incident took place near her home in Gqerberha. A month later, the child was admitted to hospital with fever, nausea, vomiting, headache, anorexia, sleeplessness, anxiety, confusion, delirium, seizures, agitation, localized pain/paresthesia, autonomic instability, hypersalivation and hydrophobia. Antemortem samples were collected for rabies investigation, and a RT-PCR test on a skin biopsy and cerebrospinal fluid (CSF) confirmed rabies. For antemortem testing, skin biopsies, saliva samples taken at different time points (for example, collected on successive days) and CSF are tested. The gold standard for rabies laboratory diagnosis is, however, the direct fluorescent antibody test (DFA) performed on impressions of postmortem-collected brain samples. The brainstem and cerebellum are the preferred tissues. Postmortem examinations and brain specimens are not always obtained for confirmatory testing, as in this case. This case is part of a rabies outbreak that has been ongoing in the Nelson Mandela Bay and other Eastern Cape communities since early 2021.

The 58-year-old man from Zambia was bitten on the arm by a suspected rabid dog in November 2021 in his home on the outskirts of Lusaka. The dog was killed and buried without any rabies tests being conducted. The patient reportedly received tetanus booster vaccination and rabies vaccine. Since the patient suffered a category III exposure, the administration of rabies immunoglobulin (RIG) was also required. The RIG was reportedly not available locally and had to be sourced from India, resulting in a six-day delay in administration. In late December 2021, the patient was hospitalized in Lusaka with spasms, fits, autonomic nervous system instability and generalized pain. He was evacuated to South Africa, where he was hospitalized in Johannesburg in early January 2022. The differential diagnosis included tetanus and other causes of encephalitis, but rabies was considered a major risk in this case. A comprehensive antemortem laboratory investigation included viral screen on CSF for usual viral pathogens and several tests for rabies including RT-PCR testing of several saliva samples, a skin biopsy sample and CSF sample. The latter repeatedly tested negative. Serology performed on serial CSF samples indicated the presence of rabies specific IgG and IgM antibodies, which was considered supportive of the clinical diagnosis of rabies. Because the blood-brain barrier, as well as the blood-spinal cord barrier, limits the passage of vaccine-elicited neutralizing antibodies from blood to CSF, the presence of rabies antibodies in the CSF, notably IgM antibodies, indicates rabies infection rather than an immune response to prophylaxis. A DFA test on postmortem brain samples confirmed rabies.

Rabies post-exposure prophylaxis (PEP) is considered safe and effective when delivered in accordance with guidelines. For the first case, reportedly no PEP was sought. Health education is crucial in communities affected by dog rabies. Often, interactions with dogs (and other animals) may be considered benign and the risk of rabies not appreciated (for example with small wounds such as nicks or scratches). Rabies PEP must be delivered promptly following possible exposure. The longer the period between exposure and delivery of PEP the greater the risk for the virus infection to develop and spread to the central nervous system where it largely evades the immune system. Certain exposures are also associated with shorter incubation periods, these include exposures to the head and neck but also other highly innervated areas. Pre-exposure prophylaxis (PrEP) provides critical protection against potential rabies exposures in occupational groups at high risk e.g. animal health workers and obviates the need for RIG in the event of a potential rabies exposure. Travelers and expatriates in countries where rabies is endemic and availability of rabies PEP, especially RIG, is likely to be limited or non-existent should consider PrEP. PrEP consists of two rabies vaccines on day 0 and day 7. The intramuscular route or intradermal route can be used, with the latter providing a cost-effective, dose-sparing option. In previously-vaccinated persons, vaccine boosters, but no RIG, should be given on day 0 and day 3 and will be highly effective, even if the primary course of vaccines was 15 to 20 years previously.

For more information on the appropriate delivery of rabies PrEP and PEP, please visit the NICD website: www.nicd.ac.za/rabies

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

ZOONOTIC AND VECTOR-BORNE DISEASES

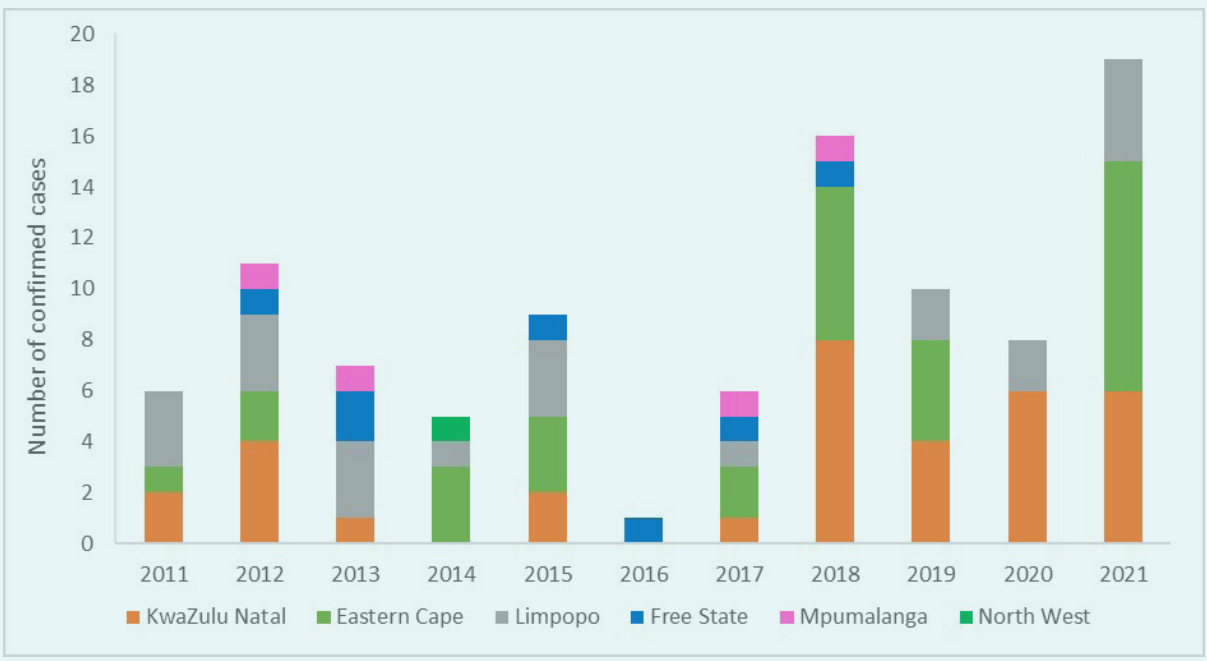

Figure 2. The number of confirmed human rabies cases in South Africa from 2011 to 2021 by province and year (Graph created from NICD data).

Arboviral infections in South Africa

The increased rainfall experienced in many parts of South Africa in recent months (and as forecast for the coming months) may result in the increased risk for exposure to mosquitoes and other arthropod vectors, and therefore the risk of endemic arboviral disease. Also, as COVID-19 restrictions are now less impeding international travel, consequently the risk of travellers who have contracted arboviral infections in arbovirus-endemic areas and return to South Africa, also increases.

More than a hundred arboviruses are known to cause human disease and are transmitted to humans by mosquitoes, midges, sandflies and ticks. Endemic arboviral infections are most common in the late summer months when the temperatures are warmer and especially following periods of rainfall. Typically, mosquitoes, ticks and other vectors are more active during such times. Rift Valley fever (RVFV); West Nile (WNV); Sindbis (SINV); chikungunya (CHIKV) and Crimean-Congo haemorrhagic fever (CCHF) viruses are important arboviruses in South Africa, although other arboviruses are also found here. A large outbreak of RVF was reported in South Africa 2010-2011 (NICD Communiqué July 2011, 10(7):4) and sporadic cases were reported from the Free State Province in 2018 (NICD Communiqué May 2018, 17(5):3). The other endemic arboviral diseases are typically reported intermittently with few focal outbreaks detected (for example the outbreak of Sindbis fever in Johannesburg in 2017. NICD Communiqué 2017, 16(1):5). Arboviral disease may be underdiagnosed and underreported in South Africa. Many arboviruses are not endemic to South Africa, but in the South African context are associated with travellers returning to South Africa from endemic areas. This includes, but is not limited to, dengue; Zika and yellow fever viruses. Although CHIKV is endemic to South Africa, human cases in South Africa are usually travellers from other areas.

The majority of arboviral infections are subclinical and self-resolving infections, but the disease spectrum is wide and disease may be debilitating and even fatal. Arboviral disease is broadly grouped according to four broad syndromes including fever, polyarthralgia, encephalitis and haemorrhagic fever, and a virus may be involved with more than one syndrome (Figure 3). Symptom onset can range from three to 14 days after the exposure.

Specialised laboratory diagnostic investigation for arboviral diseases is required to confirm or exclude diagnosis. Typically, the viraemic phase of arbovirus infections is short (may be prolonged in more severe cases) and negative RT-PCR results do not exclude the diagnosis of an arbovirus infection. Antibodies to arboviruses may be detected from day 3 – 7 after symptom onset. If initial antibody tests are negative, it is recommended to test a convalescent blood sample (collected two weeks after the acute phase of infection) to demonstrate seroconversion or the lack thereof. Laboratory findings should be considered in the light of the patient's clinical findings and the possible exposure history.

ZOONOTIC AND VECTOR-BORNE DISEASES

Rift Valley fever, CCHF and yellow fever are Category 1 notifiable medical conditions in South Africa. Other endemic or non-endemic arboviral infections are listed as Category 3 notifiable medical conditions in the country. For more information on notifiable medical conditions, https://www.nicd.ac.za/wp-content/uploads/2018/10/Notifiable-Medical-Condition_Z-foldBleed20-July2018.pdf. For more information about arboviral disease in South Africa, www.nicd.ac.za; see A-Z disease webpages.

Fever Sudden onset mostly mild, self-limiting fever; headache; arthralgia; myalgia; nausea/vomiting; retro-orbital pain; with or without a rash (mostly maculopapular); with or without thrombocytopenia; with or without leukopenia *Sindbis fever, West Nile fever*	**Polyarthralgia** With or without fever; rash; self-limiting arthritis (typically affecting the small joints of the hands and feet, wrists, knees and elbows) but may last for months/years *Chikungunya fever*
Encephalitis Encephalitis or meningoencephalitis; neurological presentation like flaccid paralysis; residual motor/mental damage and higher case-fatality ratio *Rift Valley fever, West Nile*	**Hemorrhagic fever** Bleeding tendencies; endothelial cell damage, increased vascular permeability; liver dysfunction and higher case-fatality ratio *Rift Valley fever, dengue fever*

Figure 3. Summary of the four clinical syndromes associated with arboviral disease and examples of each.

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

CORONAVIRUS DISEASE (COVID-19) PANDEMIC

Update of COVID-19 in children and adolescents ≤18 years, South Africa, 1 March 2020 – 15 January 2022

As of 15 January 2022, children and adolescents ≤18 years made up 13.5% (2 898 708/21 405 554) of SARS-CoV-2 tests, 11.4% (405 837/3 559 931) of COVID-19 cases, 5.5% (24 550/445 295) of COVID-19 associated admissions and 0.7% (703/23 276) of COVID-19 associated deaths. The latest resurgence in cases (4th wave) started in week 48 of 2021 with the highest peak in percent testing positive (40%) among children aged 13-18 years and highest peak in COVID-19-associated admissions rate among children <1 year (30 admissions per 1 million population). Since week 50 of 2021, there has been a decreasing trend in the testing rate, positivity rate, case numbers, and admissions in individuals ≤18 years. (Figures 4 - 7). To date, the percentage testing positive among children aged ≤18 years was 15.8% and 18.2% among adults ≥19 years.

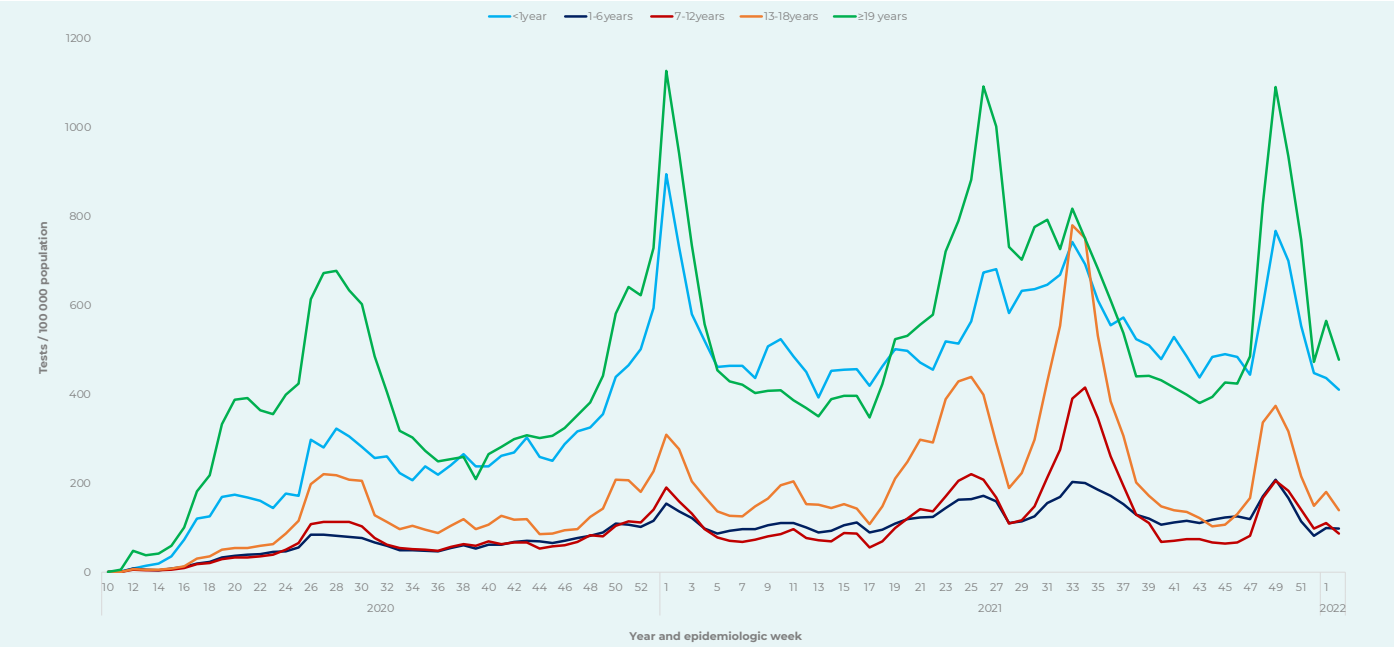

Figure 4. Rate of SARS-CoV-2 testing per 100 000 population by epidemiologic week and age group, South Africa, 1 March 2020 – 15 January 2022

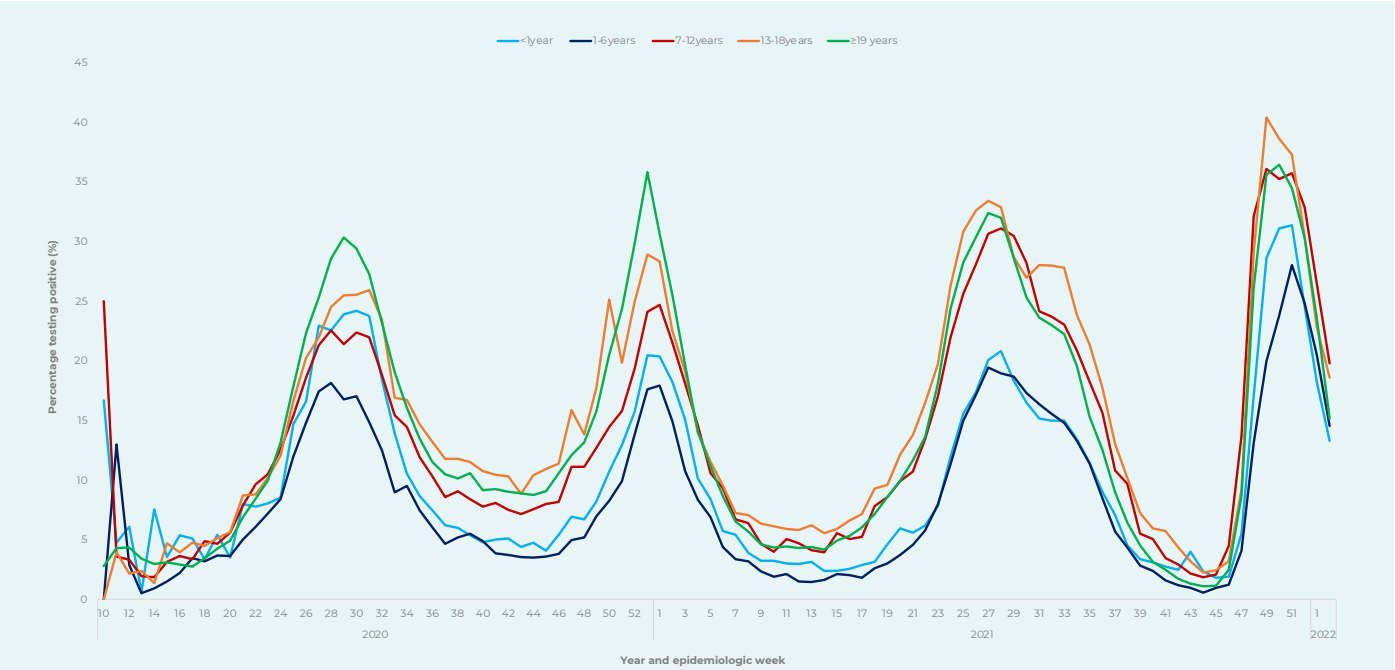

Figure 5. Percentage testing positive by epidemiologic week and age group, South Africa, 1 March 2020 – 15 January 2022

CORONAVIRUS DISEASE (COVID-19) PANDEMIC

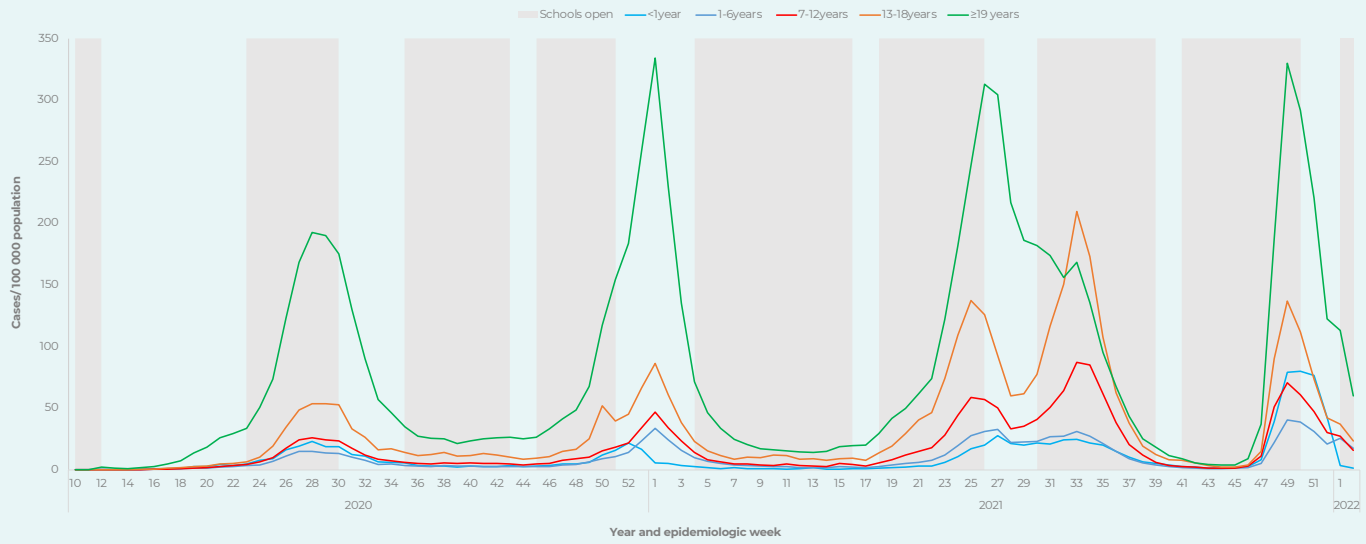

Figure 6. Weekly incidence per 100 000 population of laboratory-confirmed COVID-19 cases by epidemiologic week and age group, South Africa, 1 March 2020 – 15 January 2022

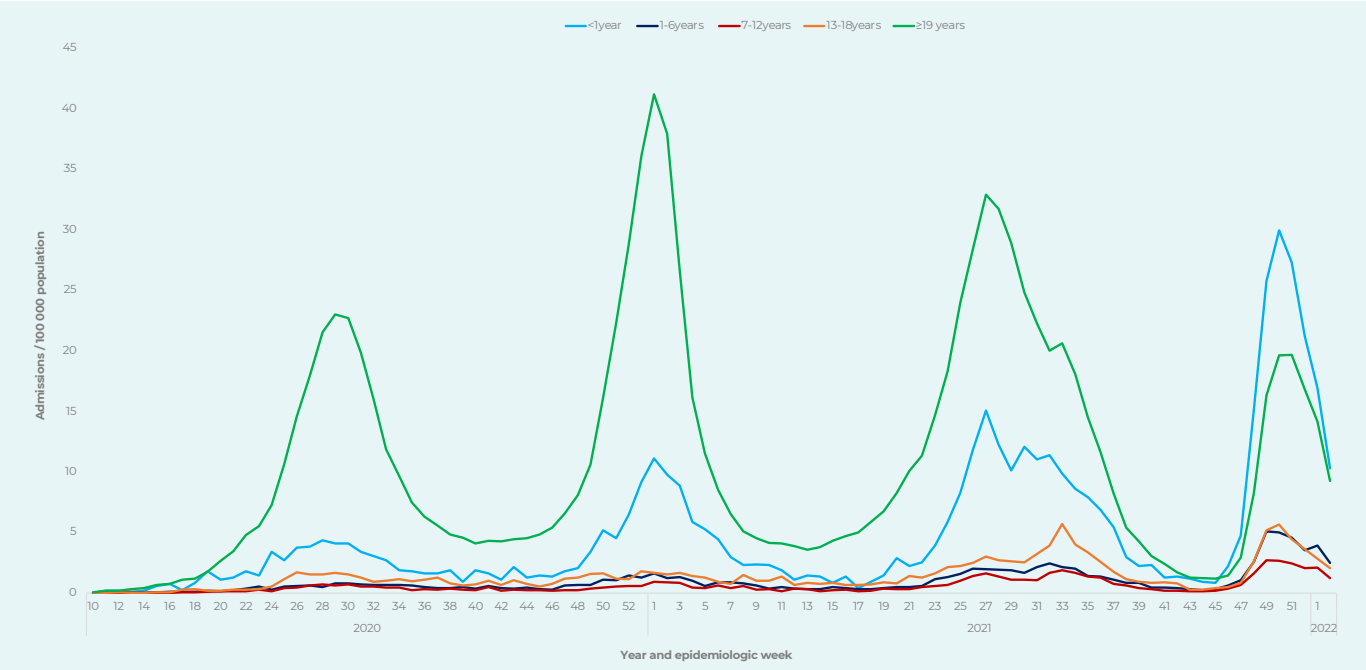

Figure 7. Rate of COVID-19-associated admissions per 1 million population by epidemiologic week and age group, South Africa, DATCOV, 1 March 2020 – 15 January 2022

Children aged ≤18 years compared to adults ≥19 years were almost 5 times as likely to be hospitalized in the 4th wave compared to the 1st wave and were 2.6 times more likely to be hospitalized in the 4th wave compared to the 3rd wave (Table 1). However, regarding testing and being a case, children compared to adults were more likely to be tested or be a case in the 4th wave compared to the 1st wave, but were less likely to be tested or be a case in the 4th wave compared to the 3rd (Table 1).

This update highlights an increase in admissions among children aged ≤ 18 years during the fourth wave compared to earlier waves. During the fourth wave, admissions among children <1 year old, which surpassed those of adults, were possibly influenced by other non-COVID related admissions. The shift in incidence among cases over the different waves to younger age groups may be due to an immunity gap. Continued monitoring of the trends among the school-going age group is important as schools remain open.

CORONAVIRUS DISEASE (COVID-19) PANDEMIC

Table 1. Wave analysis among children aged ≤18 years compared to adults aged ≥19 years, 1 March 2020 – 15 January 2022*. *models adjusted for sex, province and laboratory/hospital sector

Tests	1st wave (N = 2415973)	2nd wave (N = 3355943)	3rd wave (N = 6462702)	4th wave (N = 2287243)	Multivariable OR Wave 3 vs Wave 1 (95% CI) *	Multivariable OR Wave 4 vs Wave 1 (95% CI) *	Multivariable OR Wave 4 vs Wave 3 (95% CI) *
≥19	2166209 (89.7%)	2961798 (88.3%)	5405730 (83.7%)	2003578 (87.6%)	Reference	Reference	Reference
≤18	249764 (10.3%)	394145 (11.7%)	1056972 (16.3%)	283665 (12.4%)	1.66 (1.65-1.67)	1.23 (1.22-1.23)	0.75 (0.74-0.75)

Cases	1st wave (N = 550757)	2nd wave (N = 719278)	3rd wave (N = 1294492)	4th wave (N = 588230)	Multivariable OR Wave 3 vs Wave 1 (95% CI) *	Multivariable OR Wave 4 vs Wave 1 (95% CI) *	Multivariable OR Wave 4 vs Wave 3 (95% CI) *
≥19	507283 (92.1%)	660589 (91.8%)	1103611 (85.3%)	518574 (88.2%)	Reference	Reference	Reference
≤18	43474 (7.9%)	58689 (8.2%)	190881 (14.7%)	69656 (11.8%)	2.17 (2.15-2.20)	1.62 (1.60-1.64)	0.75 (0.74-0.76)

Admissions	1st wave (N = 70 692)	2nd wave (N = 105 776)	3rd wave (N = 147 159)	4th wave (N = 46 943)	Multivariable OR Wave 3 vs Wave 1 (95% CI) *	Multivariable OR Wave 4 vs Wave 1 (95% CI) *	Multivariable OR Wave 4 vs Wave 3 (95% CI) *
≥19	68530 (96.9%)	102534 (96.9%)	139127 (94.5%)	40728 (86.8%)	Reference	Reference	Reference
≤18	2162 (3.1%)	3242 (3.1%)	8032 (5.5%)	6215 (13.2%)	1.79 (1.70-1.88)	4.89 (4.65-5.14)	2.62 (2.53-2.71)

Source: Centre for Respiratory Diseases and Meningitis, NICD-NHLS; cherylc@nicd.ac.za

Wastewater surveillance for SARS-CoV-2 successfully heralded the 4th wave of COVID-19

In Gauteng Province, South Africa, the third wave of SARS-CoV-2 in South Africa (predominantly due to Delta variant) ended in week 34 (week starting 22 August, 2021). The incidence of laboratory-confirmed cases remained under 30 cases/week until week 47 (last week of November 2021). Levels of SARS-CoV-2 in wastewater were undetectable or under 1.5 log genome copies/ml in Gauteng Province from week 37 until epidemiological week 42.

In epidemiological week 43-45 of 2021, a first increase in SARS-CoV-2 levels in wastewater from various plants across the province was observed. The first increase in laboratory-confirmed clinical cases was observed in epidemiological week 45 of 2021 (second week of November), by which time 1-3 successive increases in SARS-CoV-2 levels in wastewater had been observed at key plants across the province (Figure 8). The fourth wave officially started in week 47 (4th week of November 2021).

S-gene target failure was detected in clinical samples of laboratory-confirmed SARS-CoV-2 patients in week 46 (3rd week of November), leading to the discovery and characterisation of Omicron variant in week 48 (first week of December 2021). Sequencing and variant analysis of RNA sequences amplified from wastewater samples successfully detected evidence of Omicron in week 47 and 48.

SARS-CoV-2 levels in wastewater were presented to the Technical Working Group (TWG) of the COVID-19 Ministerial Advisory Committee tasked with updating resurgence indicators to support COVID-19 preparedness on 17 November 2021, just prior to the discovery of Omicron. At that stage, members of the TWG, including the South African Centre for Epidemiological Modelling and Analysis (SACEMA) agreed that wastewater-based surveillance was useful, and committed to work with the NICD to support development of more robust wastewater indicators.

CORONAVIRUS DISEASE (COVID-19) PANDEMIC

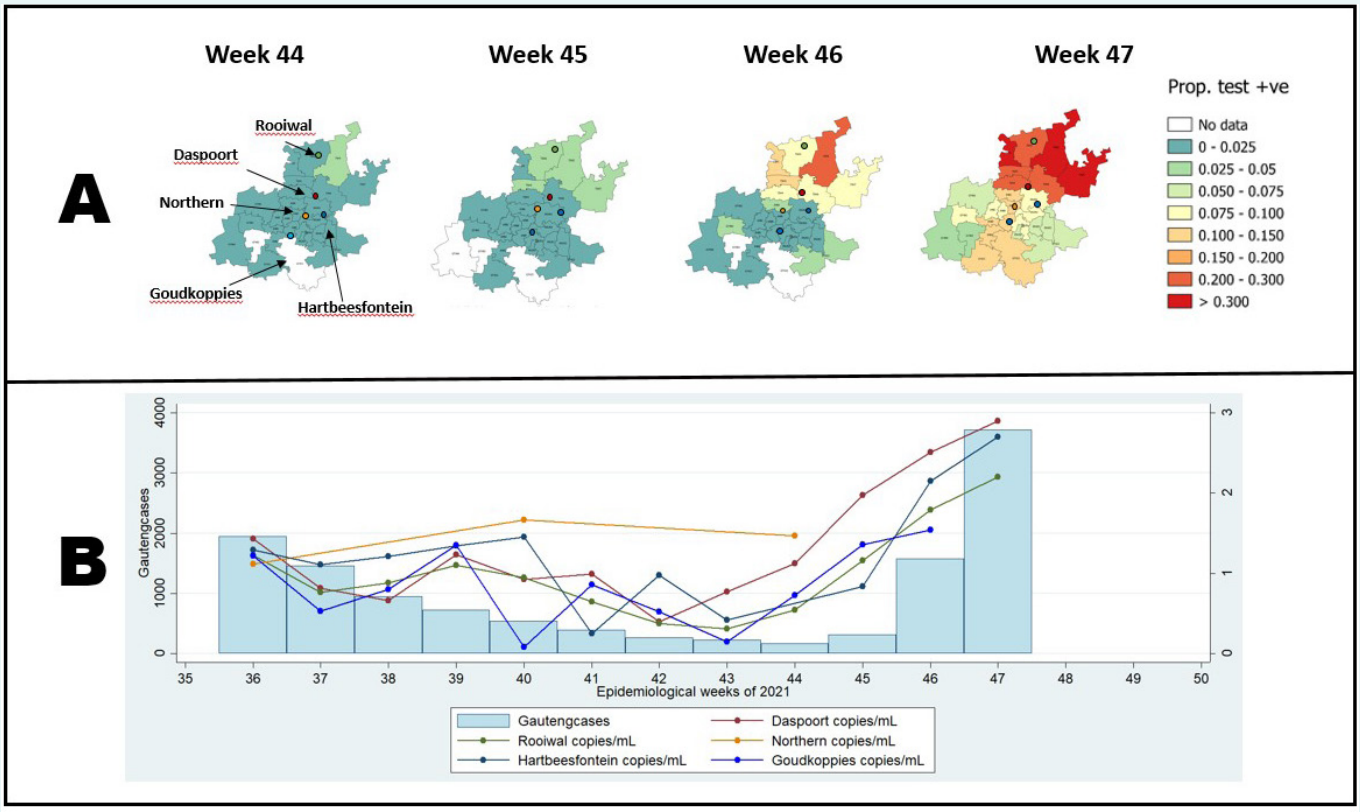

Figure 8. A. Proportion of laboratory tests for SARS-CoV-2 that tested positive across districts of Gauteng Province during epidemiological weeks 44-47, 2021. (Wastewater treatment plant locations illustrated in week 44's map). B. The levels of SARS-CoV-2 in wastewater (genome copies/ml, right axis) from selected treatment plants across Gauteng Province, and numbers of laboratory-confirmed COVID-19 cases (bars, left axis) during weeks 36-47, 2021.

Source: Centre for Vaccines and Immunology, NICD-NHLS; kerriganm@nicd.ac.za

INTERNATIONAL OUTBREAKS OF IMPORTANCE

An update on Ebola virus disease, DRC

On 16 December 2021, the Ebola virus disease (EVD) outbreak affecting Beni Health Zone in Democratic Republic of Congo (DRC), was declared over. A total of 11 cases (eight confirmed, three probable), including nine deaths and two survivors, was reported in this outbreak, which began on 8 October 2021, with an overall case fatality ratio of 82% (9/11).

During the outbreak, three (16%) out of the 19 health areas in Beni Health zone reported cases of EVD. Children under five years of age accounted for 50% of the confirmed cases (4/8).

All listed contacts completed the 21-day active follow-up period and were discharged from surveillance.

Vaccination rollout commenced on 25 November and by 14 December, a total of 1 827 front line workers had been vaccinated.

Efforts to boost frontline worker training and skills were carried out throughout the outbreak. Community education and engagement strategies were employed, utilising multiple changes, and ensuring that these efforts were far-reaching.

Source: WHO Outbreaks and Emergencies report week 51 of 2021
https://www.afro.who.int/health-topics/disease-outbreaks/outbreaks-and-other-emergencies-updates

SEASONAL DISEASES

Influenza in the northern hemisphere

As of 10 January 2022, in the northern hemisphere, influenza activity continued to increase. In the temperate zones of the northern hemisphere, influenza activity, although still low, appeared to increase in some countries, with detections of mainly influenza A (H3N2) viruses in US and Europe, and in China, influenza B-Victoria lineage viruses. Most countries in Europe have reported continued increasing influenza activity with predominantly influenza A (H3N2) detections. Some countries in Eastern Europe have reported widespread influenza activity and/or medium influenza intensity. Influenza activity in North America, predominately A (H3N2) detections, increased and hospitalisation is increasing but remains low overall. In tropical South America, influenza activity continued to increase, with influenza A (H3N2) being most frequently detected. Severe acute respiratory infection (SARI) levels were reported at extraordinary levels in Bolivia. In the Caribbean and Central American countries, influenza A (H3N2) and B virus detections increased in some countries. In East Asia, influenza activity continued to increase in China and activity remained low in the rest of the subregion. Influenza B-Victoria lineage viruses predominated.

Clinicians should have a high index of suspicion for influenza in returning travellers from the northern hemisphere.

Centre for Respiratory Diseases and Meningitis, NICD-NHLS; cherylc@nicd.ac.za

Malaria and COVID-19

The current focus on COVID-19 has distracted attention from some other public health problems, like seasonal malaria. Malaria cases generally peak in January and February after the festive season, so there should be a high index of suspicion for malaria in patients with fever or 'flu-like illness, particularly if travel to, or residence in, a malaria-endemic area is reported. In endemic areas within South Africa, all patients with a fever or a recent history of fever must be tested for malaria either by rapid diagnostic test or microscopy. If this is initially negative and no other diagnosis is found, the malaria test should be repeated a few hours later. Treat for malaria as soon as the patient is found to be positive; do not wait for COVID-19 or other results. Malaria rapidly progresses to severe illness, so early detection and treatment is essential to ensure positive outcomes.

Artemether-lumefantrine (Coartem®) remains very effective in South Africa for the treatment of uncomplicated malaria. Patients must take each dose with some fatty food (milk, cheese, peanut butter) to ensure optimal absorption of the drugs. IV artesunate (Garsun®) is the recommended treatment for severe malaria. As it is has significantly better treatment outcomes compared to IV quinine and is easier to use, it is the preferred treatment.

Be aware of Odyssean or 'taxi malaria'. This occurs when an infective mosquito is inadvertently transported from an endemic to a non-endemic area, where it subsequently infects people who have no recent travel history. Malaria should therefore be considered as a differential diagnosis, and be tested for, in patients with unexplained fever who get progressively sicker, especially if they have low platelet counts.

Information on malaria risk areas in South Africa, and treatment and prevention of malaria is available at: www.https://www.nicd.ac.za/diseases-a-z-index/malaria/

Source: Centre for Emerging Zoonotic and Parasitic Diseases, 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 9 on page 13.

Salmonellosis - Madrid, Spain

Two salmonella outbreaks with a total of 14 cases in two elderly care homes in Madrid were reported in late 2021. The outbreaks were linked to chicken burger meat. Investigations were carried out at the manufacturing company to verify the safety of the chicken burger meat where salmonella was detected, and customers have been notified so that products could be withdrawn from the market and destroyed.

Salmonella is a bacterium that was discovered in 1885 by an American scientist. Infection is contracted by eating contaminated food or drinking water. Sources of contamination are infected animals or infected humans, via stool. Salmonellosis usually presents with diarrhoea, fever, and stomach cramps beginning 6 hours to 6 days after contact with the infection. Laboratory diagnosis is made through the identification of salmonella in a person's stool.

The disease is typically self-limiting with minimal intervention required; however, those with severe illness, immunocompromised individuals, infants under 12 months or adults 65 years or older, as well as people with other co-morbidities, may require antibiotic therapy.

Kyasanur forest disease (KFD) - Shivamogga, India

In the midst of the 3rd COVID-19 wave in Shivamogga, a 57-year-old woman presented with an acute history of a fever and Kyasanur forest disease (KFD) was diagnosed on blood samples. This particular woman had been vaccinated against the disease. The last cases of KFD were detected in December 2019 where it claimed the lives of 22 patients; however, with the rise of COVID-19 those with the disease had tapered down to zero.

Kyasanur Forest disease (KFD) is caused by Kyasanur Forest disease virus (KFDV), a member of the virus family Flaviviridae. KFDV was identified in 1957 when it was isolated from a sick monkey from the Kyasanur Forest in Karnataka (formerly Mysore) State, India. Since then, 400 - 500 human cases per year have been reported.

Human transmission occurs after a tick bite or contact with an infected animal (a sick or recently dead monkey). No person to person transmission has yet been described. KFD has an incubation period of 3-4 days after initial contact where patients typically present with severe chills, fever, and headache, muscle pain and bleeding problems. Some patients recover without complications.

The risk of exposure is highest in the central and western district of Karnataka State, India. However in 2012, a virus similar to KFD was described in Saudi Arabia. Seasonality is also an important consideration with more cases identified from November to June.

KFD is diagnosed on serology through ELISA or by PCR. Treatment is supportive which includes hydration and bleeding precautions for patients. Prevention is mainly through vaccination in endemic areas of India; additionally, insect repellents and wearing protective clothing in endemic areas.

BEYOND OUR BORDERS

Typhoid fever - Manaulanan, Philippines

There has been a rising number of typhoid fever cases from a remote village in Manaulanan, Philippines with 30 persons having been hospitalized with typhoid fever. The majority of are children, who contracted the disease from an unsafe water source. Manaulanan residents have no potable drinking water, and they rely on commercially available bottled drinking water. This group of patients reportedly got their drinking water from water pumps and open wells. No deaths have been reported.

Typhoid and paratyphoid fever are similar diseases caused by *Salmonella* Typhi and *Salmonella* Paratyphi respectively, transmitted via contaminated food or beverages. Typhoid is diagnosed in the laboratory through blood cultures as well as the identification of *Salmonella* Typhi in a stool or urine specimen.

Clinical features of the disease are diarrhoea, fever, vomiting, headache, muscle pain and malaise. Initial empiric antibiotic therapy should be started, and later amended based on culture sensitivities.

Typhoid is a vaccine-preventable disease.

Figure 9. 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.promedmail.org), World Health Organization (www.who.int), Centres for Disease Control and Prevention (www.cdc.gov), World Organisation for Animal Health (www.oie.int), National Institute for Communicable Diseases (www.nicd.ac.za); Outbreak News Today (www.outbreaknewstoday.com)

WHO AFRO UPDATE

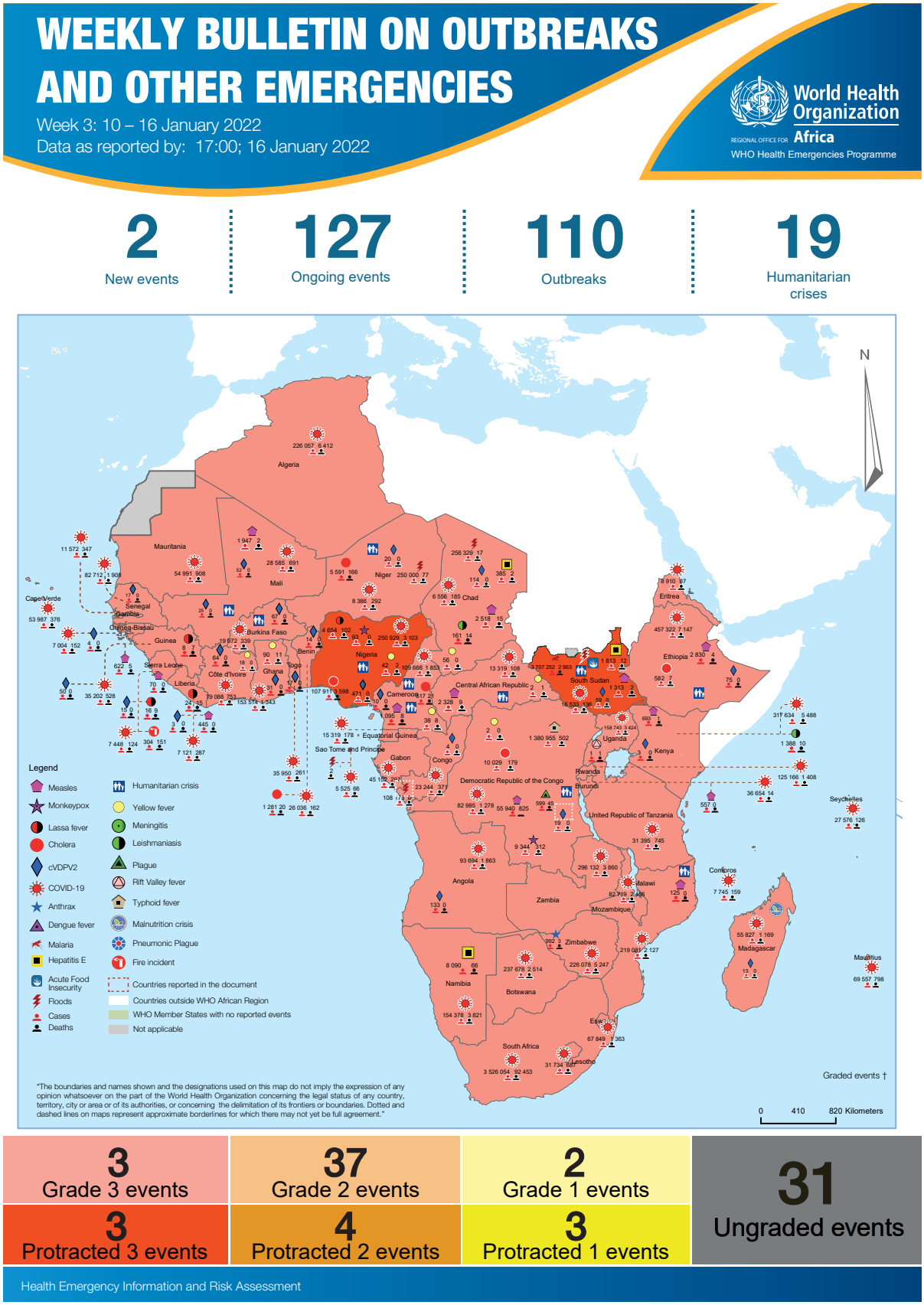

Figure 10. The Weekly WHO Outbreak and Emergencies Bulletin focuses on selected public health emergencies occurring in the WHO African Region. The African Region WHO Health Emergencies Programme is currently monitoring 129 events. For more information, see link below:
https://apps.who.int/iris/bitstream/handle/10665/351110/OEW03-1016012022.pdf

The Communicable Diseases Communiqué offers up-to-date information regarding communicable diseases in South Africa and abroad. It forms part of the NICD's key mandate of disease surveillance, outbreak response and research on communicable diseases. The publication is released on a monthly basis and can be accessed via the NICD website on http://www.nicd.ac.za/publications/internal-publications/

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