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

COMMUNICABLE DISEASES COMMUNIQUÉ

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CONTENTS

Editor's Note

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The more stringent COVID-19 level 4 lockdown regulations announced by President Cyril Ramaphosa on Sunday 27 June are the anticipated consequence of the rapid increase in positive cases, hospitalisations and deaths due to SARS-CoV-2 infections in recent weeks, constituting the onset of the third wave of the pandemic in South Africa. The update on the COVID-19 outbreak in this issue of the Communiqué provides a comparison of the three waves. At this point Gauteng Province exceeds the weekly incidence risk it reported in the first and second wave peaks. Evidence is accumulating that the current surge in cases is dominated by the delta variant of the SARS-CoV-2 virus, which emerged in India, and which has spread widely across the world. This variant appears to be more transmissible in comparison with the beta variant, which was largely responsible for South Africa's second wave. A low degree of protection acquired from previous beta variant infection, resulting in susceptibility to delta variant, is a concerning development.

Detections of influenza viruses through the NICD's surveillance programmes in recent weeks have been increasing, although remaining well below the 10-year mean detection rate, and have included a patient with coincident SARS-CoV-2 infection. The simultaneous rapidly increasing rate of COVID-19 infections means that people at high risk for severe influenza, especially those with underlying health problems (diabetes, chronic heart and lung conditions), obese individuals, and pregnant women, are strongly encouraged to get influenza vaccine.

Properly-administered postexposure prophylaxis (PEP) for rabies is generally highly effective, so the report of a 3-year-old who died from rabies three weeks after receiving PEP is concerning. The circumstances of this case are being investigated, but there are a number of factors like the site and extent of the animal bite, thoroughness of wound treatment, timing of prevention measures, and dosage and administration of immunoglobulin and vaccine, that can influence the effectiveness of rabies PEP.

Other interesting topics in this issue are surveillance reports for respiratory syncytial virus, invasive meningococcal disease and rotavirus in South Africa, while outside the country, the end of the Ebola virus disease outbreak in Guinea, and outbreaks of hantavirus in Panama, monkeypox in the DRC, and Crimean-Congo haemorrhagic fever in Turkey, are covered.

ZOONOTIC AND VECTOR-BORNE DISEASES

An update on rabies in South Africa

For 2021 five cases of human rabies have been laboratory confirmed in South Africa to date, including two cases from KwaZulu-Natal (KZN) and three from Limpopo (LPP) provinces. The most recent three cases (one from KZN and two from LPP) were identified in children reporting exposures to domestic dogs or cats. One of the cases had presented at local clinics following the exposure event and rabies post-exposure prophylaxis (PEP) was administered. The reasons for PEP failure in this case is unclear (investigation pending), but it is often associated with inappropriate administration of the PEP. For example, when an exposure occurs, it is imperative that all wounds, however small, are washed copiously with water and soap. This is followed by administration of rabies vaccine and infiltration with rabies immunoglobulin (RIG) in all wounds.

The first case involved a six-year-old girl from LPP, with no clear history of a specific exposure incident. The child developed signs and symptoms of rabies in May 2021, presenting with confusion, body weakness, hyporeflexia, a mild fever and seizures. An antemortem-collected saliva sample tested positive for rabies by RT-PCR.

The 2nd and 3rd cases involved toddlers from LPP and KZN, respectively. The three-year-old female had reportedly been bitten by a dog two weeks prior to falling ill and it was unclear if medical attention had been sought following the incident. She presented with classic neurological features of rabies, including insomnia, confusion and logorrhea. Her saliva sample tested positive for rabies by RT-PCR. In the case of the 2-year-old boy, he had sustained facial injuries after being bitten by a dog and was given rabies PEP, receiving both RIG and the course of rabies vaccine. Three weeks later he was hospitalized with headache, fever, emesis and seizures. Clinical features compatible with paralytic rabies were noted and the MRI showed features of hypoxia and encephalitis. In this case, an antemortem-collected nuchal biopsy specimen tested rabies RT-PCR positive. Typically, incubation periods for rabies are six to eight weeks, but shorter or longer incubation periods are not unheard of. Shorter incubation periods are often linked with exposures to highly innervated areas of the body, or to the face, head and shoulders.

For more information on rabies and disease prevention, please visit the NICD website: https://www.nicd.ac.za/diseases-a-z-index/rabies/

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

CORONAVIRUS DISEASE (COVID-19) PANDEMIC

An update on COVID-19 outbreak in South Africa

With an estimated population of 59 622 351 in 2020, South Africa, reported its first two cases of COVID-19 on 2 March 2020 (epidemiologic week 11 of 2020). From 2 March 2020 through 19 June 2021 (week 24 of 2021), there were 1 823 319 cases of COVID-19 reported, nationally. To date, there have been three periods of increased transmission (waves). A wave is defined as the period representing a weekly incidence from ≥30 cases per 100 000 persons to a weekly incidence <30 cases per 100 000 persons.

This report describes the upward trend of the three waves, from a weekly incidence of ≥30 cases per 100 000 persons to the peak of the wave. The analysis was restricted to the upward trend of the wave as case characteristics may differ in the up- and downward slopes of the wave. The upward trend of the first wave in South Africa was from week 24 of 2020 (35.7 cases per 100 000 persons) and peaked at week 28 of 2020 (138.1 cases per 100 000 persons); the second wave from week 47 of 2020 (30.2 cases per 100 000 persons), peaking in week 1 of 2021 (240.4 cases per 100 000 persons); and the third wave from week 19 of 2021 (30.8 cases per 100 000 persons) to date (114.1 cases per 100 000 persons) (as at 19 June 2021) (Figure 1).

There has been a steady increase in cases from 21.6 per 100 000 in week 18 of 2021 to 114.1 cases per 100 000 persons to date (week 24). A steep increase was reported from week 23 of 2021, with the Gauteng Province reporting the highest number of new cases in the previous three weeks (Figure 1).

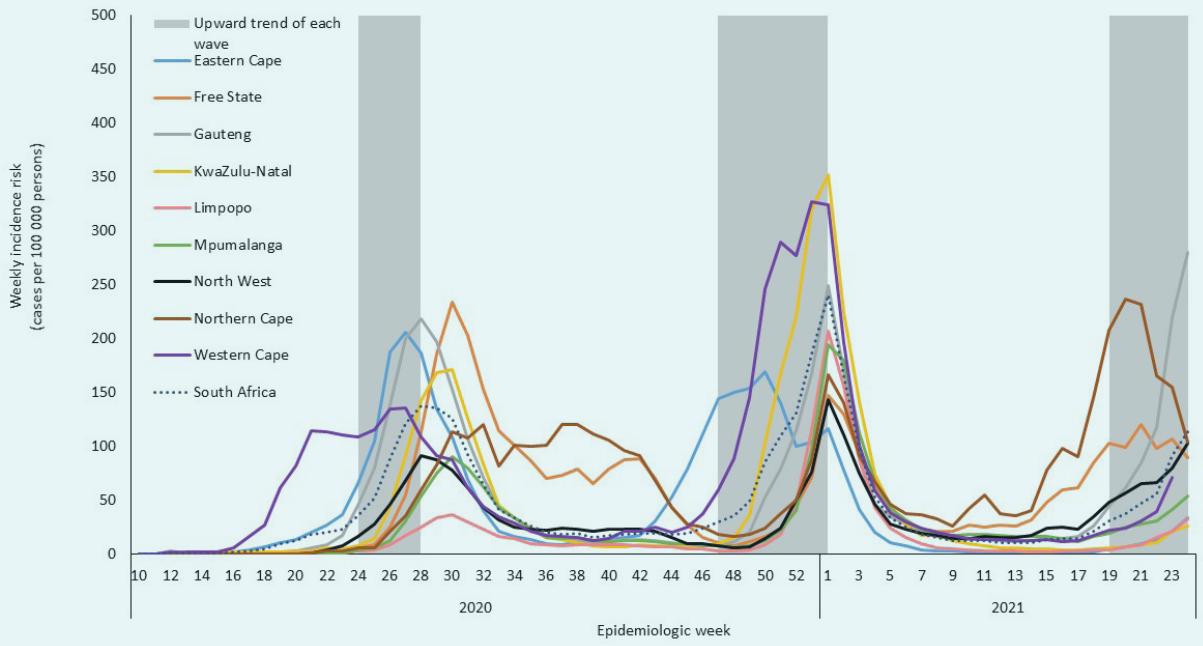

Figure 1. Weekly incidence risk of confirmed cases of COVID-19 by province and epidemiologic week, South Africa, 2 March 2020 – 19 June 2021 (n=1 823 319).

In week 24 of 2021, South Africa reported a cumulative incidence risk of 3 058.1 cases per 100 000 persons. The highest weekly incidence risk of 240.4 cases per 100 000 persons was reported in week 1 of 2021. Western Cape and Eastern Cape provinces were the first to reach a peak in the first and second wave respectively, with other provinces following within one to two weeks.

The first wave in South Africa peaked in week 28 of 2020, with an incidence risk of 138.1 cases per 100 000 persons. The highest incidence risk was reported in Gauteng Province (218.8 cases per 100 000), followed by Eastern Cape (186.8 cases per 100 000), KwaZulu-Natal (142.5 cases per 100 000), Free State (113.3 cases per 100 000) and Western Cape (108.4 cases per 100 000) provinces.

The second wave peaked in week 1 of 2021 (240.4 cases per 100 000 persons), with the highest weekly incidence reported in KwaZulu-Natal Province (351.7 cases per 100 000 persons), followed by Western Cape (326.8 cases per 100 000 persons), Gauteng (249.3 cases per 100 000 persons), and Limpopo (207.3 cases per 100 000 persons) provinces.

The third wave is ongoing at the time of reporting and the weekly incidence is currently below that reported in the first and second wave peaks. However, Northern Cape and Free State provinces appear to have reached their peaks in weeks 20 and 21 of 2021, respectively. Two provinces have reported a weekly incidence risk higher than that reported in the first and second wave peaks: Northern Cape Province (236.3 compared to 120.0 and 167.0 cases per 100 000 persons in the first and

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second wave, respectively) and Gauteng Province (279.7 compared to 218.8 and 249.3 cases per 100 000 persons in the first and second wave, respectively).

The majority of cases were in the 20-39-year age group in the first wave (103 431/259 859, 40%) and the second wave (188 815/517 155, 37%). However, in the third wave (week 19-24 of 2021), most cases were in the 40-59-year age group (76 438/225 013, 34%). The majority of cases were female in all three waves.

On multivariable analysis, when comparing the age distributions of reported cases between the waves, more cases in extremes of age were reported than those aged 20-39 years in both the second and the third waves as compared to the first wave (Table 2). During second wave compared to first wave, cases were more likely to be reported from Limpopo, KwaZulu-Natal, Mpumalanga, Northern Cape and Western Cape provinces; whereas in the third wave compared to the first wave were more likely to be reported from Northern Cape, Free State, Mpumalanga and Limpopo provinces than from the Eastern Cape Province.

Table 1: Number and incidence risk (cumulative/weekly) of laboratory-confirmed cases of COVID-19 per 100 000 population during the upward trend of the first wave (week 24-28 of 2020), second wave (week 47 of 2020 – week 1 of 2021), and third wave (week 19-24 of 2021) by province, South Africa, 2 March 2020 –19 June 2021 (N=1 002 027)

	Number of cases					Weekly cases per 100 000 persons		
Province	**Cumulative number**	**Wave 1**	**Wave 2**	**Wave 3**	**Population mid-2020**	**Wave 1**	**Wave 2**	**Wave 3**
Eastern Cape	202 494	50 572	72 763	6 197	6 734 001	186.8	117.0	34.0
Free State	110 296	6 071	9 818	18 090	2 928 903	113.3	147.6	89.7
Gauteng	553 908	105 87	109 194	125 136	15 488 137	218.8	249.3	279.7
KwaZulu-Natal	346 813	34 634	141 136	9 382	11 531 628	142.5	351.7	26.6
Limpopo	69 537	3 385	23 890	5 297	5 852 553	24.9	207.3	32.9
Mpumalanga	88 537	5 024	18 246	9 376	4 679 786	54.0	194.7	53.9
North West	86 680	10 349	13 520	17 232	4 108 816	91.2	143.4	102.8
Northern Cape	56 678	1 668	5 440	14 221	1 292 786	59.6	167.0	103.9
Western Cape	308 376	42 281	123 148	20 082	7 005 741	108.4	323.7	96.0
Grand Total	**1 823 319**	**259 859**	**517 155**	**225 013**	**59 622 351**	**138.1**	**240.4**	**114.1**

Table 2: Comparison of characteristics of new COVID-19 cases between the upward trend of the first wave and second wave, and first and third wave in South Africa, N=1 002 027

				COVID-19 Cases	
Characteristics	**Wave 1**	**Wave 2**	**Wave 3**	**Multivariate wave1 vs wave2**	**Multivariate wave1 vs wave3**
(n/%)	**259 859**	**517 155**	**225 013**	**adjusted OR (95% CI)**	**adjusted OR (95% CI)**
Age group					
0-4	3 104 (1.2)	5 636 (1.1)	2 343 (1.0)	0.9 (0.9-0.96)	1.1 (1.0-1.1)
5-9	3 578 (1.4)	7 197 (1.4)	4 483 (2.0)	1.0 (0.99-1.1)	1.7 (1.7-1.8)
10-14	6 099 (2.4)	11 960 (2.3)	9 511 (4.2)	1.0 (0.99-1.1)	2.3 (2.2-2.4)
15-19	9 759 (3.8)	21 050 (4.1)	16 192 (7.2)	1.2 (1.2-1.2)	2.6 (2.5-2.7)
20-39	103 431 (39.8)	188 815 (36.5)	71 206 (31.7)	1	1
40-59	94 746 (36.5)	177 168 (34.3)	76 438 (34.0)	1.0 (1.0-1.0)	1.2 (1.2-1.2)
60-69	16 328 (6.3)	47 331 (9.2)	19 253 (8.6)	1.5 (1.5-1.6)	1.8 (1.8-1.9)
>=70	10 594 (4.1)	32 587 (6.3)	15 290 (6.8)	1.6 (1.6-1.7)	2.2 (2.1-2.2)
Unknown	12 220 (4.7)	25 411 (4.9)	10 297 (4.6)	1.1 (1.1-1.1)	1.2 (1.2-1.3)

CORONAVIRUS DISEASE (COVID-19) PANDEMIC

				COVID-19 Cases	
Characteristics	**Wave 1**	**Wave 2**	**Wave 3**	**Multivariate wave1 vs wave2**	**Multivariate wave1 vs wave3**
Sex, (n, %)					
Female	148 611 (57.2)	292 631 (56.6)	122 668 (54.5)	1	1
Male	109 110 (42.0)	218 138 (42.2)	100 962 (44.9)	1.1 (1.0-1.1)	1.1 (1.1-1.1)
Unknown	2 138 (0.8)	6 386 (1.2)	1 383 (0.6)	1.1 (1.1-1.2)	0.8 (0.7-0.8)
Province (n, %)					
Eastern Cape	50 572 (19.5)	72 763 (14.1)	6 197 (2.8)	1	1
Free State	6 071 (2.3)	9 818 (1.9)	18 090 (8.0)	1.2 (1.1-1.2)	24.1 (23.2-25.1)
Gauteng	105 875 (40.7)	109 194 (21.1)	125 136 (55.6)	0.8 (0.8-0.8)	9.9 (9.6-10.1)
KwaZulu-Natal	34 634 (13.3)	141 136 (27.3)	9 382 (4.2)	3.0 (2.9-3.0)	2.2 (2.2-2.3)
Limpopo	3 385 (1.3)	23 890 (4.6)	5 297 (2.4)	5.4 (5.2-5.7)	12.8 (12.2-13.5)
Mpumalanga	5 024 (1.9)	18 246 (3.5)	9 376 (4.2)	2.7 (2.6-2.8)	15.5 (14.8-16.2)
North West	10 349 (4.0)	13 520 (2.6)	17 232 (7.7)	1.0 (0.99-1.1)	13.6 (13.1-14.1)
Northern Cape	1 668 (0.6)	5 440 (1.1)	14 221 (6.3)	2.3 (2.1-2.4)	70.3 (66.3-74.4)
Western Cape	42 281 (16.3)	123 148 (23.8)	20 082 (8.9)	2.1 (2.1-2.2)	3.9 (3.8-4.1)
Sector (n, %)					
Public	96 335 (37.1)	241 791 (46.8)	74 623 (33.2)	1	1
Private	163 524 (62.9)	275 364 (53.3)	150 390 (66.8)	0.7 (0.7-0.7)	1.1 (1.1-1.1)

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

INTERNATIONAL OUTBREAKS OF IMPORTANCE

An update on Ebola virus disease outbreak, Guinea

The Ebola virus disease (EVD) outbreak that emerged in Gouecke, in the southern N'zerekore prefecture, Guinea, in February 2021 was declared over on 19 June 2021. A total of 23 cases including 16 confirmed and seven probable cases, with 12 deaths (case fatality ratio 52.2%) had been reported. Five of the cases were identified as health workers, and one as a traditional health practitioner. Females and persons over 40 years were most affected.

The index case in this outbreak was identified as a female health worker, who developed symptoms on 15 January 2021, sought health care at two facilities and a traditional practitioner and subsequently demised on 28 January 2021. Her burial took place on 1 February, where safe and dignified burial practices were not carried out. Throughout the course of this outbreak, a further 17 secondary cases with epidemiological links to this probable case were identified.

The Minister of Health and other partners reinforced efforts to control and contain the outbreak. Multidisciplinary teams were deployed to the field for active case finding, follow-up, contact tracing and care of patients. During this period, 1 239 samples (758 blood samples and 483 swabs) were analysed, testing capacities were expanded and reinforced. A total of 10 089 alerts was notified, 96% of which were investigated. 1 031 of the 1 110 contacts of confirmed and probable cases were followed daily by contact tracing teams. A total of 10 873 people, including 885 contacts and 2 779 front line workers, was vaccinated.

Rapid response played a significant role in prompt detection and control of the outbreak with relatively few infections and fatalities. Swift vaccination of high-risk persons, investigation of alerts and control of points of entry also played a role.

Despite the outbreak being declared over, unrecognised chains of transmission at a community level remain a possibility. With surveillance efforts further challenged by poor access to communities and the burden of other disease outbreaks, namely COVID-19 and yellow fever, the country's ability to response to a new outbreak may be impaired.

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

SEASONAL DISEASES

Influenza, 2021

A further 29 detections of influenza B have been made since May, bringing the total to 39 influenza B detections. Where the lineage was able to be determined, all were identified as influenza B/Victoria. In early March, one detection of influenza A H3N2 was made from the specimen of a patient in the Western Cape Province. All the detections were made from patients in one of the three active surveillance programmes who presented with pneumonia (17), influenza-like illness (14), or had other respiratory signs and symptoms (9). One of these patients, a 53-year-old female who presented with a two-day history of a cough and nasal congestion, also tested positive for SARS-CoV-2. Patients were from the Eastern Cape, KwaZulu-Natal, North West and Western Cape provinces. Although the influenza detections in the sentinel sites in the past few weeks have been increasing, the detections have remained below the 10-year mean detection rate for all three surveillance programmes (Figure 2 a-c).

With influenza circulation coinciding with an increase in COVID-19 infections, individuals at risk for severe influenza illness or complications are encouraged to vaccinate for influenza. The National Department of Health is prioritising the high-risk groups, which include individuals with underlying conditions (e.g. diabetes, cardiac and chronic lung conditions), obesity and pregnant women. Additional information on influenza and influenza vaccination can be accessed at: https://www.nicd.ac.za/wp-content/uploads/2021/04/Influenza-guidelines_-April-2021-final.pdf

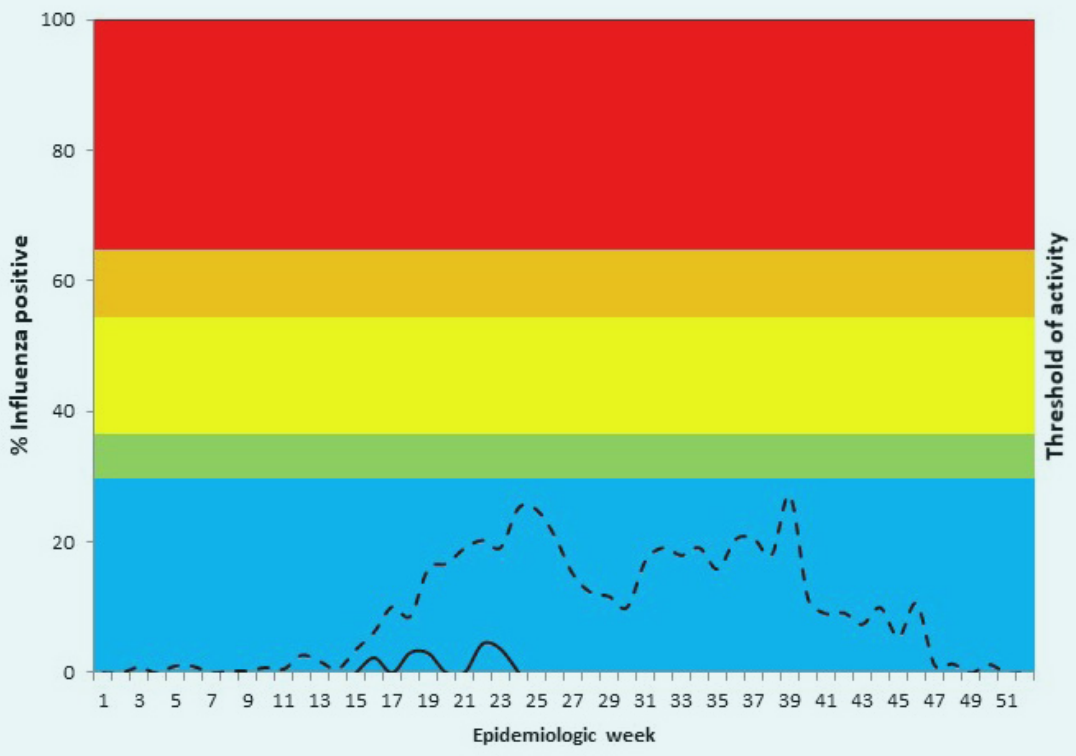

Figure 2a. Influenza-like illness (ILI) surveillance (primary health) percentage influenza detections and epidemic thresholds*

*Threshold based on 2013-2019 data; ** Threshold based on 2010-2019

SEASONAL DISEASES

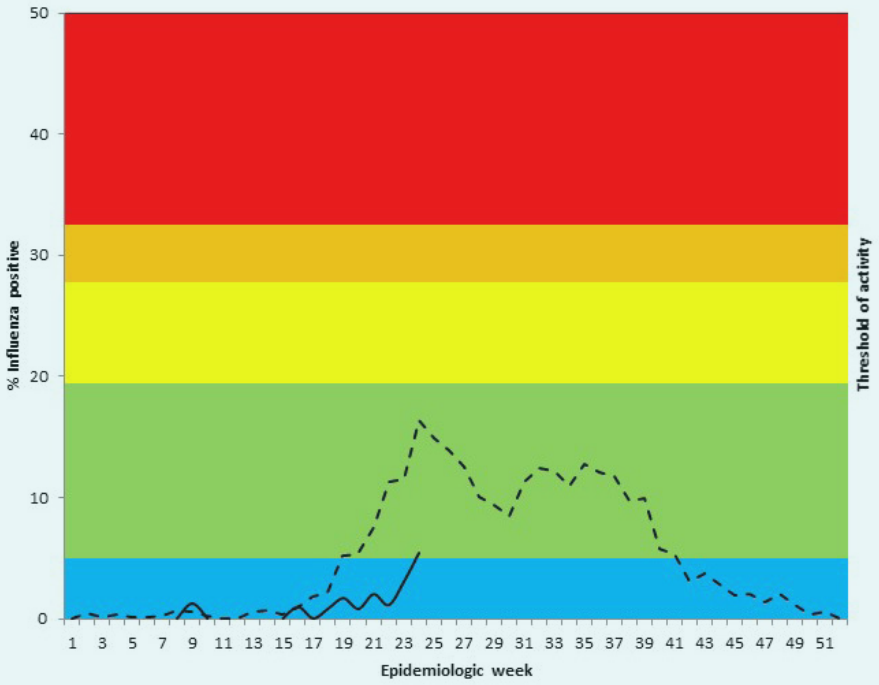

Figure 2b. Pneumonia surveillance percentage influenza detections and epidemic thresholds**

*Threshold based on 2013-2019 data; ** Threshold based on 2010-2019

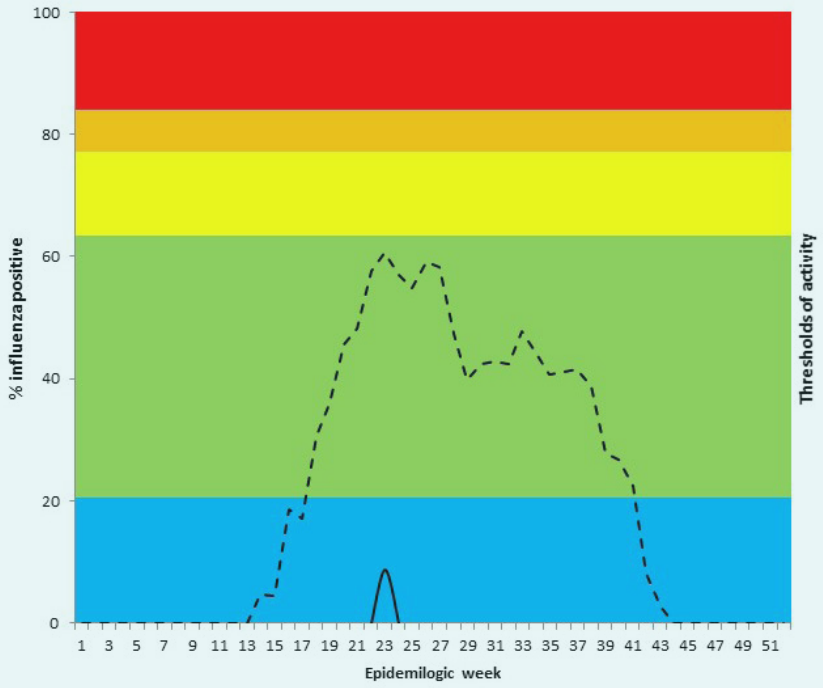

Figure 2c. ILI surveillance (Viral Watch) percentage influenza detections and epidemic thresholds**

*Threshold based on 2013-2019 data; ** Threshold based on 2010-2019

SEASONAL DISEASES

Respiratory syncytial virus (RSV) 2021

The proportion of RSV detections in the pneumonia surveillance programme has remained below threshold since mid-April [using the Moving Epidemic Method (MEM), a sequential analysis using the R Language, to calculate the duration, start and end of the annual epidemic]. However, the detection rate in children under the age of five had been in low threshold, excluding one week when fewer specimens than usual were received. It has, however, since mid-March remained below the 10-year mean detection rate (Figure 3).

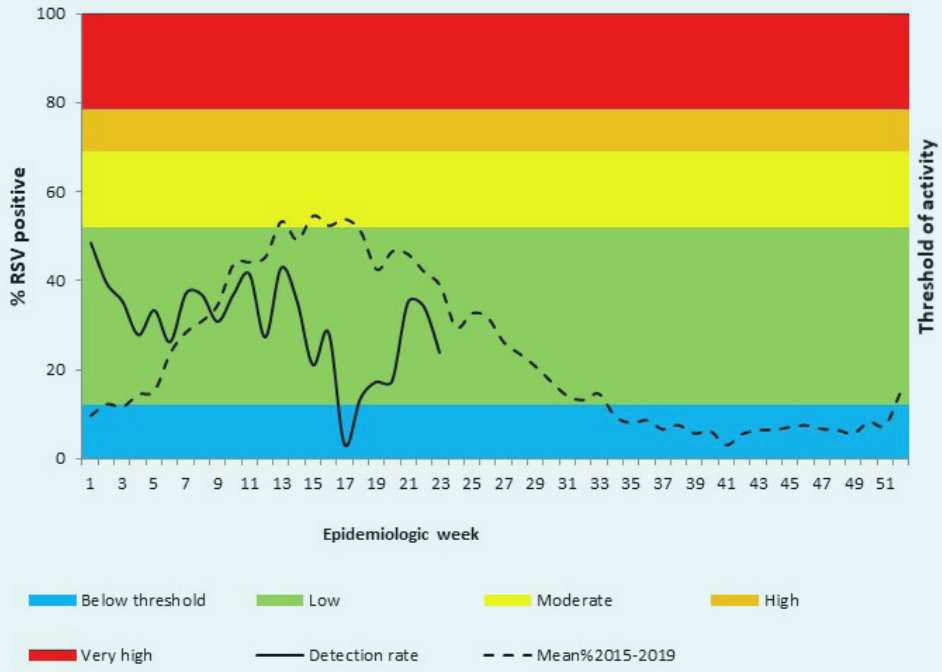

Figure 3. ILI surveillance (Viral Watch) percentage respiratory syncytial virus detections and epidemic thresholds**

*Threshold based on 2013-2019 data; ** Threshold based on 2010-2019

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

Invasive meningococcal disease in South Africa, 2021

In 2021, as of end of May, 17 cases of laboratory-confirmed invasive meningococcal disease (IMD) have been reported through the GERMS-SA surveillance network. Over a similar period in 2020, 25 cases were reported. IMD cases in 2021 are all sporadic with no outbreaks or clusters detected. Invasive disease numbers are down, possibly due to the continued mandatory mask-wearing in public and limited social interaction due to the COVID-19 pandemic, thus reducing the respiratory transmission of meningococci.

Most cases (53%) occurred in children: 29% (5/17) in <5 years of age; 6% (1/17) in 6-9 years, and 18% (3/17) in 10-14 years of age. Almost all IMD cases were males (88%, 15/17). The majority of cases were from the Western Cape (41%, 7/17), followed by Gauteng (29%, 5/17), Eastern Cape (24%, 4/17) and North West provinces (5%, 1/17). To date, seven of 17 reported cases were serogrouped: five were serogroup B and two were serogroup W. Throughout 2020, serogroup B predominated, followed by W.

The winter months typically signify an increase in invasive meningococcal disease, possibly due to crowding and poor ventilation indoors, as well as climatic changes. Clinicians should be vigilant at this time as non-specific early symptoms of IMD (headache, fever, myalgia) are often followed by rapid disease progression if antibiotics are not started timeously. Intravenous (IV) ceftriaxone is the preferred empiric therapy, followed by IV penicillin once antimicrobial susceptibility has been confirmed. Meningococcal disease is a category 1 notifiable medical condition (NMC) and any clinically suspected or laboratory-confirmed case should be reported immediately to the provincial Communicable Disease Control Coordinators to ensure appropriate contact tracing, responsible prescribing of chemoprophylaxis and case counting.

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

SEASONAL DISEASES

Rotavirus, 2021

Rotavirus is a common childhood infection with a seasonal pattern, peaking during the cooler, drier months of the year. The rotavirus vaccine was introduced into the expanded programme of immunisation in August 2009 and currently, the annual rotavirus season in South Africa occurs from late June to mid-August. With the very limited and late 2020 season coupled with likely disruptions in vaccination programs in 2020 due to the SARS-CoV-2 pandemic and the restricted age range of rotavirus vaccine administration (24 weeks), the 2021 rotavirus season is expected to be larger than seen in the last few years. Diarrhoeal surveillance is conducted at three sentinel sites (Pelonomi Hospital, Free State Province; Klerksdorp/Tshepong hospitals; North West Province and Red Cross Children's Hospital, Western Cape Province) targeting all patients who present for the treatment of diarrhoea and restarted in May 2021 (week 13).

A total of 85 stool specimens has been screened with 18% (20/85) testing positive for rotavirus, currently concentrated in the Western Cape Province. The 2021 season is dominated by G2P[4] strains. Most of the rotavirus cases are in children <5 years (19/20; 95%; median age 11 months). The rotavirus cases present with vomiting and diarrhoea (median maximum number of stools in a 24 hours period is 6; range 4-15), fever in 50% of patients (10/20) and most have mild to moderate dehydration (80% 1-5% dehydration; 16/20), with all discharged after treatment. Most children had also received two doses of the rotavirus vaccine (89%; 17/19) with the remaining two children having received one dose. The single rotavirus case in individuals >5 years was in an adult female (31 years of age) who was HIV-positive and not on ARVs.

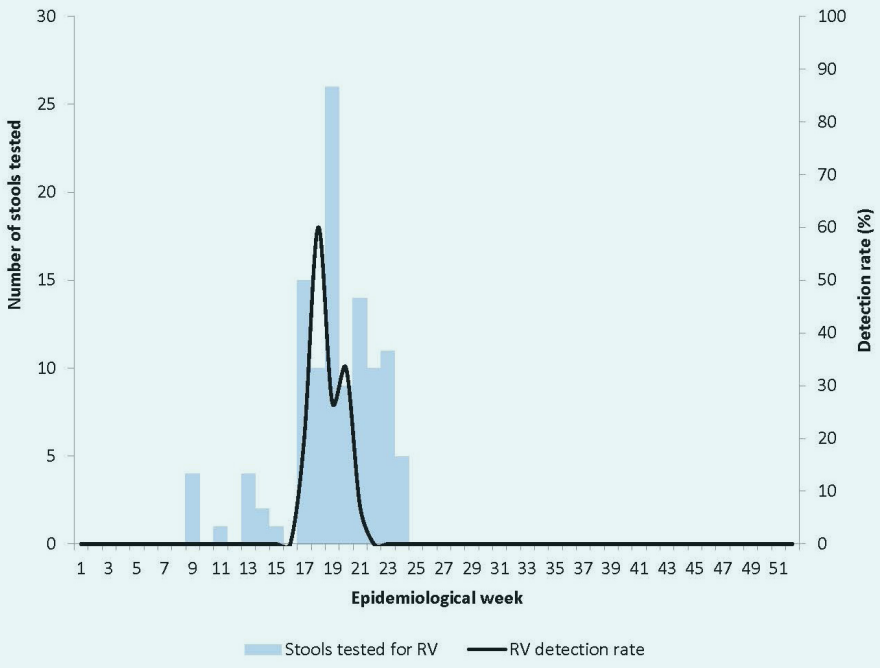

Figure 4. The total number of stool specimens collected and screened for rotavirus and detection rate by epidemiological week from three sentinel surveillance sites, South Africa, 2021

Source: Centre for Enteric Diseases, NICD-NHLS; nicolap@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 5 on page 12.

Hantavirus – Panama

In Panama, 11 cases of hantavirus infections have been reported in 2021. These cases span four provinces in the central region of the country and one in the eastern region. One case has demised. Around the same period last year, Panama had reported seven cases, all concentrated in central provinces, and no deaths.

Hantavirus represents a group of numerous species of viruses found in rodents, causing chronic infection but with little clinical significance to the rodents. Transmission of hantavirus to humans is through contact with the urine, saliva or faeces from infected rodents, mainly via the aerosol route during activities such as sweeping. Limited human-to-human transmission has been described in very rare cases. Viruses are endemic to rodents across the Americas, Europe and Asia and are found mainly in rural areas.

There are two main clinical presentations of hantavirus disease in humans that are both initially non-specific acute febrile illnesses with a headache – haemorrhagic fever with renal syndrome (HFRS) and hantavirus pulmonary syndrome (HPS). The clinical presentation and severity varies across different viral species. HFRS presents around a week after exposure with back and abdominal pain, nausea, blurred vision and a characteristic flushing of the face, neck and chest. Signs of bleeding tendencies may be present and the disease process may lead to hypovolaemic shock. HPS usually presents two weeks after exposure with myalgia, a cough and sometimes gastrointestinal symptoms. This is followed by acute respiratory distress due to pulmonary oedema. Treatment of both forms of hantavirus disease is supportive, preferably at an intensive-care level, and cases of HFRS have been shown to have better outcomes when administered early antiviral therapy of ribavirin. Mortality rates are up to 35% for HFRS and over 40% for HPS.

The mainstay of hantavirus control is through the primary prevention measures of rodent control, and limiting spread via airborne transmission. This includes home cleanliness to prevent attraction of rodents, appropriate storage of food and other household consumables, adequate ventilation and wet cleaning. Secondary prevention includes early detection and treatment of cases that is possible only with a high index of suspicion on the part of the assessing clinician, with particular attention to travel history, a history of exposure to rodents and a review of recent infectious diseases found in colleagues who shared similar spaces with the case. Active and passive surveillance strategies are used in areas where hantavirus are endemic.

In South Africa, hantavirus was first identified in a human this year; a case report is described in the May 2021 edition of the Communicable Disease Communiqué. This case of a 37-year-old male travelling to South Africa had been infected in his place of residence and work, Croatia, a country known to be endemic for hantavirus.

Monkeypox – DRC

The Democratic Republic of Congo (DRC) has reported 1 515 human cases of monkeypox since the start of 2021 and 49 deaths. Monkeypox is indigenous to the central and western African regions with surveillance activity in the DRC reporting 5 288 cases in 2019 and 6 257 in 2020.

Monkeypox is an acute viral illness with zoonotic potential. It is found mainly in wild rodents (squirrels, mice, rats) and non-human primates. In humans, following an incubation period of up to 3 weeks, monkeypox typically presents with two clinical phases. The invasive phase lasts up to five days and is characterised by a fever, intense headache and lack of energy, lymphadenopathy, back pain and myalgia. Within three days of the invasive phase beginning, skin lesions begin to appear, going through macular, papular, vesicular and pustular stages before scabbing and crusting off over a period of 2-4 weeks. Skin lesions are disseminated but more concentrated on the face and extremities, including the palms and soles. The disease is self-limiting but may be complicated by secondary infections of the skin and cornea, pneumonia, encephalitis and sepsis. Treatment is supportive. Approximately 11% of cases demise.

Monkeypox was given its name due to the virus being first detected in monkeys. The monkeypox virus belongs to the same genus as the smallpox and cowpox viruses (Orthopoxvirus). Despite the name, it is not closely related to chickenpox, but presents with skin lesions that have some similarities.

Clinically, monkeypox may be differentiated from smallpox by the presence of lymphadenopathy; from cowpox by the more disseminated rash and longer incubation period; and from chickenpox by the presence and higher severity of the prodromal/invasive phase and the depth and distribution of the skin lesions that include the palms and soles. Definitive diagnosis may be confirmed through PCR of tissue from the skin lesions – fluid, scab or a biopsy – or during the prodromal phase from tonsillar or nasopharyngeal swabs.

Transmission of the monkeypox virus is most commonly from contact with an infected animal or animal products. Human-

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to-human transmission occurs through contact with the skin lesions of an infected person, respiratory droplets or items that the case has come in contact with such as bedding, clothes and eating utensils. Prevention strategies include avoiding contact with potential animal sources of infection; and robust surveillance systems to detect human cases early and implement infection prevention and control measures, including isolation and contact tracing activities.

Vaccination against smallpox, performed prior to the disease being declared eradicated in 1980, afforded some protection against monkeypox. However, as the vaccinia-based vaccine is no longer available to the public, new vaccine development is under way to develop an effective vaccine against monkeypox.

Crimean-Congo haemorrhagic fever – Turkey

Turkey has reported 243 cases of Crimean-Congo haemorrhagic fever (CCHF) since the beginning of 2021; 13 of these cases have demised. This is lower than the same period in 2020 when 480 cases were reported. Of interest, Turkey has also reported the first case of infection with both CCHF and COVID-19 at the same time. This 60-year-old woman was admitted to hospital with severe disease but has since recovered.

CCHF is a viral haemorrhagic fever caused by the Nairovirus, found in Africa, Europe and Asia. The virus may infect a variety of animals including cattle, sheep, large wildlife, hares and ostriches, causing no clinical disease. However, this infection remains in the animal for a week during which time the virus will be transmitted to ticks that bite it. This perpetuates a tick-animal-tick cycle. Transmission to humans occurs through tick-bites (or from squashing infected ticks through incorrect removal techniques), contact with infected animals or animal products during the slaughtering period, or contact with body fluids of an infected human.

In humans, following an incubation period of around three days after a tick-bite, or up to nine days after contact with an infected animal, CCHF presents with fever, myalgia, dizziness, neck pain and stiffness, backache, headache, sore eyes and photophobia. There may be gastrointestinal, upper respiratory or psychiatric symptoms (sharp mood swings and confusion). The disease progresses towards bleeding tendencies and multi-organ failure and has a mortality rate up to 40%. Treatment is mainly supportive and the antiviral ribavirin may provide some benefit.

Prevention of CCHF is aimed mainly at preventing tick-bites and reducing the risk of animal-to-human transmission. Preventing ticks from biting humans includes using repellents and long clothing in high-risk areas, and looking for and removing ticks from clothing and the body after being involved in high-risk activities. The occupational risk of animal handlers and of healthcare workers may be mitigated through general infection prevention and control protocols for blood-borne disease, including the use of personal protective equipment. Tick-to-animal transmission through the use of acaracides may be beneficial in well-managed livestock facilities. A practical control method for this was used following a South African outbreak at an ostrich abattoir. For 14 days prior to slaughter, ostriches were quarantined with strict tick control to ensure that they would not be infected at the time of slaughter, thus reducing the risk of tick-to-ostrich and subsequently ostrich-to-human transmission. Further preventive measures include heightened surveillance to detect and treat cases early, and contact tracing.

Figure 5. 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), Centers 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); Division of Public Health Surveillance and Response, NICD-NHLS; outbreak@nicd.ac.za

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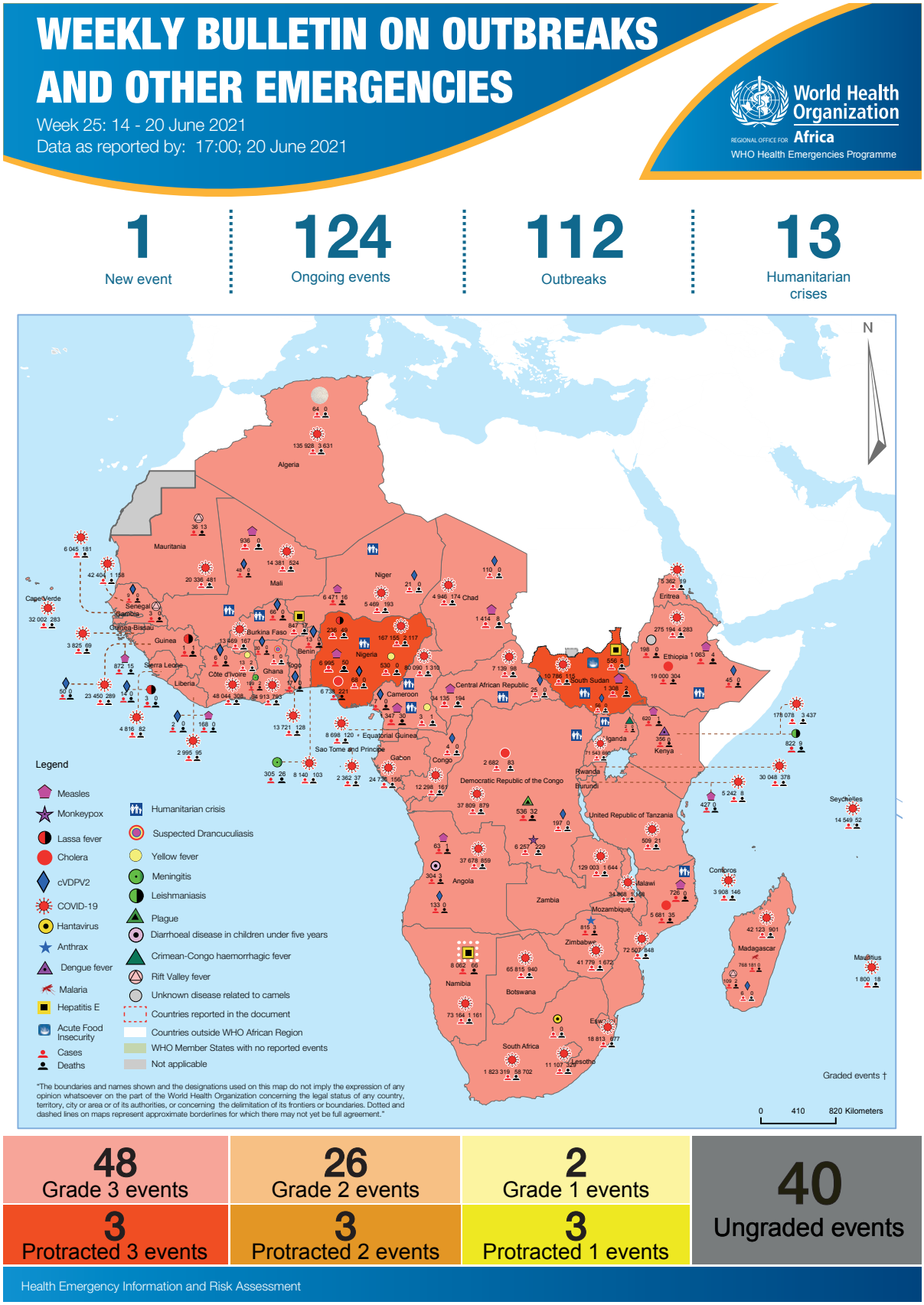

Figure 6. The Weekly WHO Outbreak and Emergencies Bulletin focuses on selected public health emergencies occurring in the WHO African Region. The African Region WHO Health Emergencies Programme is currently monitoring 125 events. For more information see link below:
https://apps.who.int/iris/bitstream/handle/10665/341933/OEW25-1420062021.pdf

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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