



CONTENTS

PAGE

1 ZOONOTIC AND VECTOR-BORNE DISEASES

Monkeypox – multi-national outbreak	2
An update on rabies in South Africa	3
Lassa fever – South Africa	4
Ebola virus disease – an update	4

2 HEPATITIS OF UNKNOWN ORIGIN

5

3 WHO AFRO UPDATE

6

4 BEYOND OUR BORDERS

8

Editor's Note



Dr Michelle Groome

The recent resurgence in COVID-19 cases, fuelled largely by the BA.4 and BA.5 sublineages of the Omicron variant of concern, has been associated with low numbers of COVID-19 hospitalisations and deaths. We seem to have entered a new phase of the COVID-19 pandemic, with most South Africans having been exposed to the SARS-CoV-2 virus, been vaccinated or a combination of both, leading to good protection against severe disease outcomes. However, we cannot let our guard down when it comes to potential infectious disease threats.

On 12 May 2022, a case of Lassa fever was diagnosed in a man from KwaZulu-Natal who had recently returned from Nigeria, an endemic country. This was only the second case of Lassa fever diagnosed in South Africa, the first occurring in 2007. Both were imported cases and no secondary cases of Lassa fever were reported. Rabies remains a concern, with three new cases of human rabies confirmed since our last report.

Cases of monkeypox, a zoonotic disease endemic to West and Central Africa, have been reported from 22 WHO Member States that are not endemic for monkeypox virus across four WHO regions, between 13 to 26 May 2022. This is the first time that cases and clusters are being reported concurrently in widely disparate WHO geographical areas and without known epidemiological links to endemic countries. While South Africa has not yet detected a monkeypox case, we need to be aware of how this disease presents and how it is transmitted in order to limit transmission should it reach our shores. Detailed information can be found on the NICD website (<https://www.nicd.ac.za/diseases-a-z-index/monkeypox/>).

Clinicians also need to be aware of the cases of acute hepatitis of unknown aetiology that have occurred in previously healthy young children. As of 26 May 2022, 650 probable cases fitting the WHO case definition have been reported from 33 countries in five WHO Regions. To date, there have been no cases reported in the African region and the exact aetiology is still under investigation. Detailed information for clinicians, including the case investigation form, can be found here: <https://www.nicd.ac.za/diseases-a-z-index/hepatitis-of-unknown-aetiology/>. Please report any cases fulfilling the case definition to the NICD.

Vaccine-preventable disease outbreaks on our continent are of particular concern. The African region is seeing an increasing number of measles cases and Mozambique recently declared an outbreak of wild poliovirus type 1 after confirming that a child had contracted the disease. This is the second case of wild poliovirus confirmed in southern Africa this year, following a case in Malawi in February. Some infants and children might have missed their routine immunisations during the COVID-19 pandemic. Please ensure that all childhood vaccinations are up to date, as this is the best way to prevent resurgences of vaccine-preventable diseases.

Enjoy reading this edition!

ZOONOTIC AND VECTOR-BORNE DISEASES

Monkeypox- multi-national outbreak

From 13 May 2022 to 31 May 2022, monkeypox has been confirmed in 23 non-endemic countries. At 26 May 2022, a total of 257 cases has been laboratory confirmed and a further 120 suspected cases were reported to the World Health Organization. The outbreak is unprecedented as it presents the first outbreak of monkeypox involving several non-endemic countries simultaneously. It is also already the largest outbreak of monkeypox outside of endemic states to date. The epidemiological links of cases are still under investigation but most of the cases reported to date have been found in men that have sex with men (MSM). There are also evidence suggesting the involvement of large social gatherings that may have served as super-spreader events. Genetic analysis of the viral genomes associated with some of the cases indicate the circulation of the Western African clade of monkeypox virus with the viruses most closely related to those reported in Nigeria since 2018. The hypothesis is that the outbreak is caused by a single source introduction, likely a traveller to an endemic area such as Nigeria, with community spread affecting primarily the MSM community.

Monkeypox is caused by infection with monkeypox virus, a virus endemic to the deep-forested regions of a number of Western and Central African countries (including Democratic Republic of Congo, Nigeria, Central African Republic, Cameroon, Ghana, Sierra Leone, Liberia, South Sudan and Ivory Coast). This is a zoonotic disease with the natural host to be confirmed. The first human cases of monkeypox was reported in the 1970s and it has remained a relatively rare disease of humans since. Cases of monkeypox are reported intermittently from the endemic countries although a systematic increase of cases have been noted in recent years. In the first five months of 2022, the Democratic Republic of Congo reported more than 1 200 cases of monkeypox whilst Nigeria reported nearly 50 cases. Cases of monkeypox outside of endemic areas have included the 2003 outbreak of monkeypox in the US which was linked to the exotic pet trade. Since 2018, six cases of monkeypox in travellers have been noted respectively in Israel, the United Kingdom, Singapore and the US. A secondary case of transmission was noted only in one of these cases and involved a health care worker. No fatalities were recorded in these cases.

Monkeypox is typically a mild self-limiting disease. The incubation period following exposure ranges from 5-21 days. Initial signs and symptoms include fever, intense headache, back pain, malaise and intense weakness. Lymphadenopathy

is noted. The rash develops 1-3 days following onset of febrile illness. The rash involves blister-like skin lesions which are often found on the face and extremities (including the soles of the feet and palms of the hands). The lesions may also found on mouth, genitalia and eyes. Corneal lesions are less commonly reported. The lesions evolve from macules to papules to vesicles to pustules. The pustules will crust over and scabs will then fall off. Scarring may be noted in some cases. The number of lesions varies from very few to widely spread across the body. Most cases will resolve in 3-4 weeks. Severe cases in endemic countries have been mostly reported in children. It is also anticipated that immunocompromised individuals may be predisposed to more severe disease. Cases are diagnosed based on the presence of the rash and confirmed by specific laboratory investigations. The NICD provides referral diagnostic service for investigation of monkeypox cases in South Africa and guidance on the submission of samples for investigation is available from the NICD website. Differential diagnosis includes other causes of rash illness including chickenpox, measles, bacterial skin infections, syphilis and non-infectious aetiologies such as medication associated allergies.

Although there are a number of suggested anti-viral therapies for monkeypox, most cases will not require such intervention and management is supportive. Currently there are no specific monkeypox vaccines commercially available. Vaccines previously used for smallpox immunization provides up to 85% cross-protective immunity to monkeypox. Smallpox vaccination was discontinued in most countries in the 1980s due to the successful eradication of smallpox. Some level of immunity is therefore expected in the population aged 40-50 years (depending when smallpox vaccination ceased in the country) and onwards. Stocks of smallpox vaccines are available in international stockpiles and it may be that large scale production may be started up again.

Current recommendations for outbreak response includes increased surveillance for possible cases, case investigation with laboratory confirmation followed by case tracing and monitoring. Isolation of confirmed cases are recommended and the requirement of in-hospital isolation may be considered on a case by case basis. For more information on the outbreak responses to confirmed monkeypox cases visit the NICD website.

For more information on monkeypox and current developments, visit the NICD website.

ZOONOTIC AND VECTOR-BORNE DISEASES

An update on rabies in South Africa

Since the previous report, three new cases of human rabies have been confirmed in South Africa. These cases were reported from Limpopo (n=2) and the Eastern Cape (n=1). In addition, two deaths from the Eastern Cape are reported as probable rabies cases; however, this could not be confirmed by laboratory testing. In total, seven human rabies deaths were

laboratory confirmed for South Africa for 2022 as of 20 May 2022. These cases are reported from the Eastern Cape (n=3), Limpopo (n=3), and KwaZulu-Natal (n=1) (Figure 1). In addition to the confirmed cases, four probable human rabies cases are recorded from the Eastern Cape.

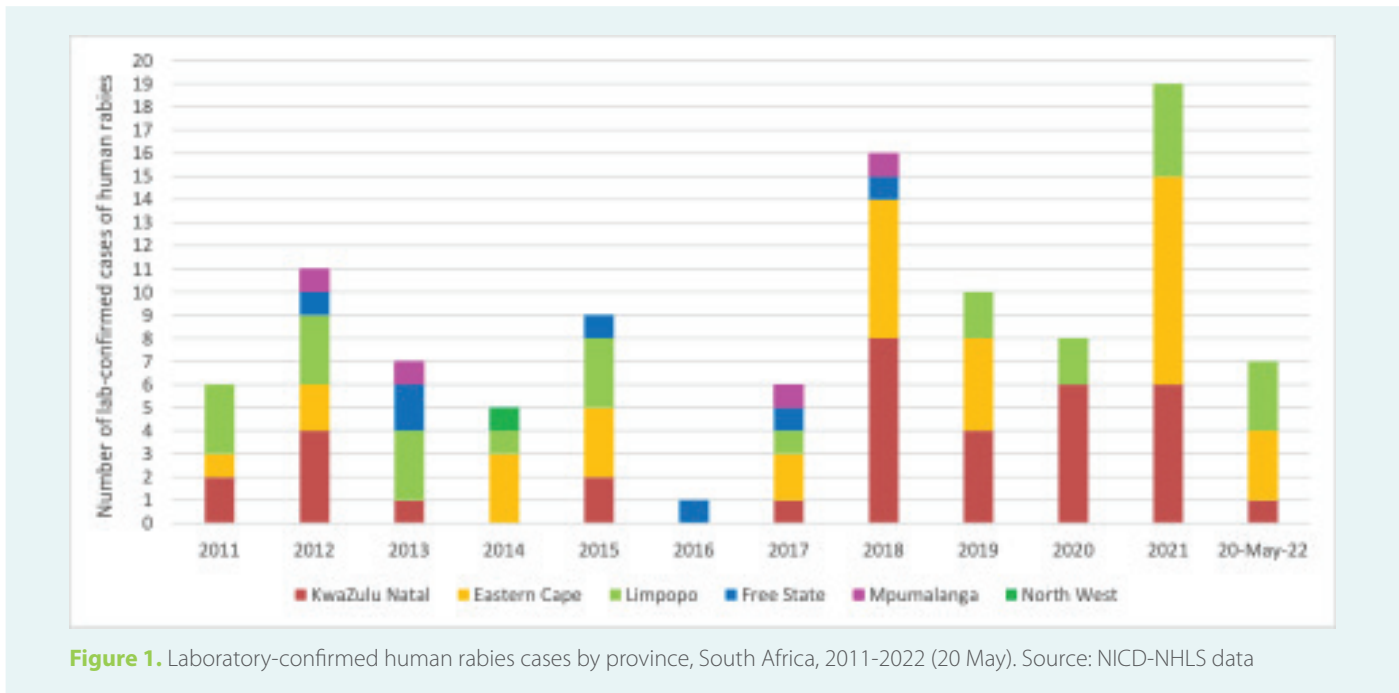


Figure 1. Laboratory-confirmed human rabies cases by province, South Africa, 2011-2022 (20 May). Source: NICD-NHLS data

The five rabies cases reported here for the period 21 April – 20 May 2022 involved children from the ages 2 – 14. In four of these cases, dog bite histories were reported. For one case the exposure history remains unclear. In three of the cases no rabies post-exposure prophylaxis was sought or provided and for the remaining two cases vaccination was provided with no rabies immunoglobulin. The administration of rabies immunoglobulin

in category 3 exposures, by infiltration of all wound sites, is critical to prevent rabies virus infection. The immunoglobulin provides neutralization at the wound site, the entry site of the virus, and prevent the infection from occurring.

For more information on rabies and how to prevent human cases, please visit www.nicd.ac.za.

ZOONOTIC AND VECTOR-BORNE DISEASES

Lassa fever – South Africa

Lassa fever is a zoonotic viral infection that is endemic to several countries in the West African region. Up to 5000 Lassa fever associated deaths are reported in the endemic countries annually. In the endemic countries, the natural host of this virus is a rodent, the multimammate rat (*Mastomys natalensis*), although other rodent species may also be involved. These rodents are persistently infected and shed the virus in their urine and faeces. Humans can encounter the virus through direct contact or inhalation of the virus in areas that have been contaminated by the infected rats. Person-to-person transmission is mostly through close contact, and contact with infected blood and bodily fluids.

A case of Lassa fever was diagnosed in a man from KwaZulu-Natal on 12 May 2022. The man had extensive travel history in Nigeria before returning to South Africa. He had been ill in

Nigeria for approximately 10 days before travelling to South Africa, where he decided to seek further medical care. He was hospitalized shortly after returning to South Africa with initial clinical diagnosis of bacterial sepsis. The patient demised. Lassa fever was considered as differential diagnosis given the patient's travel history and clinical findings including fulminant hepatitis. The diagnosis was confirmed by RT-PCR testing at the NICD.

Public health responses included active contact tracing and monitoring. No secondary cases of Lassa fever have been reported and monitoring of all cases concluded by the time of this report. This was the second case of Lassa fever being imported into South Africa. The previous case, reported in 2007, was a Nigerian health care worker who was treated at a hospital in South Africa. The risk of importation of Lassa fever to South Africa remains low.

Source: Outbreak Response Unit, NICD-NHLS, outbreak@nicd.ac.za

Ebola virus disease – an update

At 25 May 2022, 5 cases (4 confirmed, 1 probable) of Ebola virus disease (EVD) have been reported from the Equateur province, Democratic Republic of Congo. All five cases are deceased. This is the 18th EVD outbreak in the DRC since the 1970s, and the third to affect Equateur Province since 2018. The cases are reported from Mbandaka and Wangata. Based on genetic analysis of Ebola viruses associated with these cases, the outbreak appears

to be unlinked to previous outbreaks in the province. Contact tracing and monitoring and also ring vaccination are used to respond to the outbreak.

There are currently no suspected or confirmed cases of EVD linked to the DRC outbreak in South Africa. The risk of importation of EVD to South Africa remains low.

Source: Outbreak Response Unit, NICD-NHLS jacqueline@nicd.ac.za

SEASONAL DISEASES**Hepatitis of unknown origin**

On 5th April 2022, the World Health Organization received notification of 10 cases of severe acute hepatitis of unknown aetiology from central Scotland in the United Kingdom (UK). Since then, there has been a continuing increase in the number of reports of these cases among previously well children. As of 26 May 2022, 650 probable cases fitting the WHO case definition have been reported from 33 countries in five WHO Regions, with 99 additional cases pending classification. The majority of probable reported cases (374) are from the WHO European Region (22 countries), with 222 cases from the United Kingdom alone. Of the probable cases, at least 38 children have required transplants, and nine deaths have been reported to WHO. To date, there have been no cases reported in the African region. These cases of severe acute hepatitis are of particular concern as most cases have affected children under 6 years of age who were previously well.

Ongoing investigations suggest this acute hepatitis may be linked to adenovirus infection, however the exact aetiology remains to be determined. Adenovirus has not yet been identified in the liver tissue samples analysed, and adenovirus is ubiquitous, so the currently observed and tenuous associations may well be co-incidental. The potential role of SARS-CoV-2 is also under investigation, as it has been detected in a few cases, either in isolation or with adenoviral co-infection. There is currently no evidence of an association between COVID-19 vaccination and acute hepatitis of unknown origin. Tests for hepatitis viruses A-E have been negative in all cases. Clinicians are advised to consider adenovirus testing in paediatric patients presenting with hepatitis of unknown cause. There is currently no documented association with travel, diet or water source in any of the cases.

WHO AFRO UPDATE

WEEKLY BULLETIN ON OUTBREAKS AND OTHER EMERGENCIES

Week 17: 18 – 24 April 2022
Data as reported by: 17:00; 24 April 2022



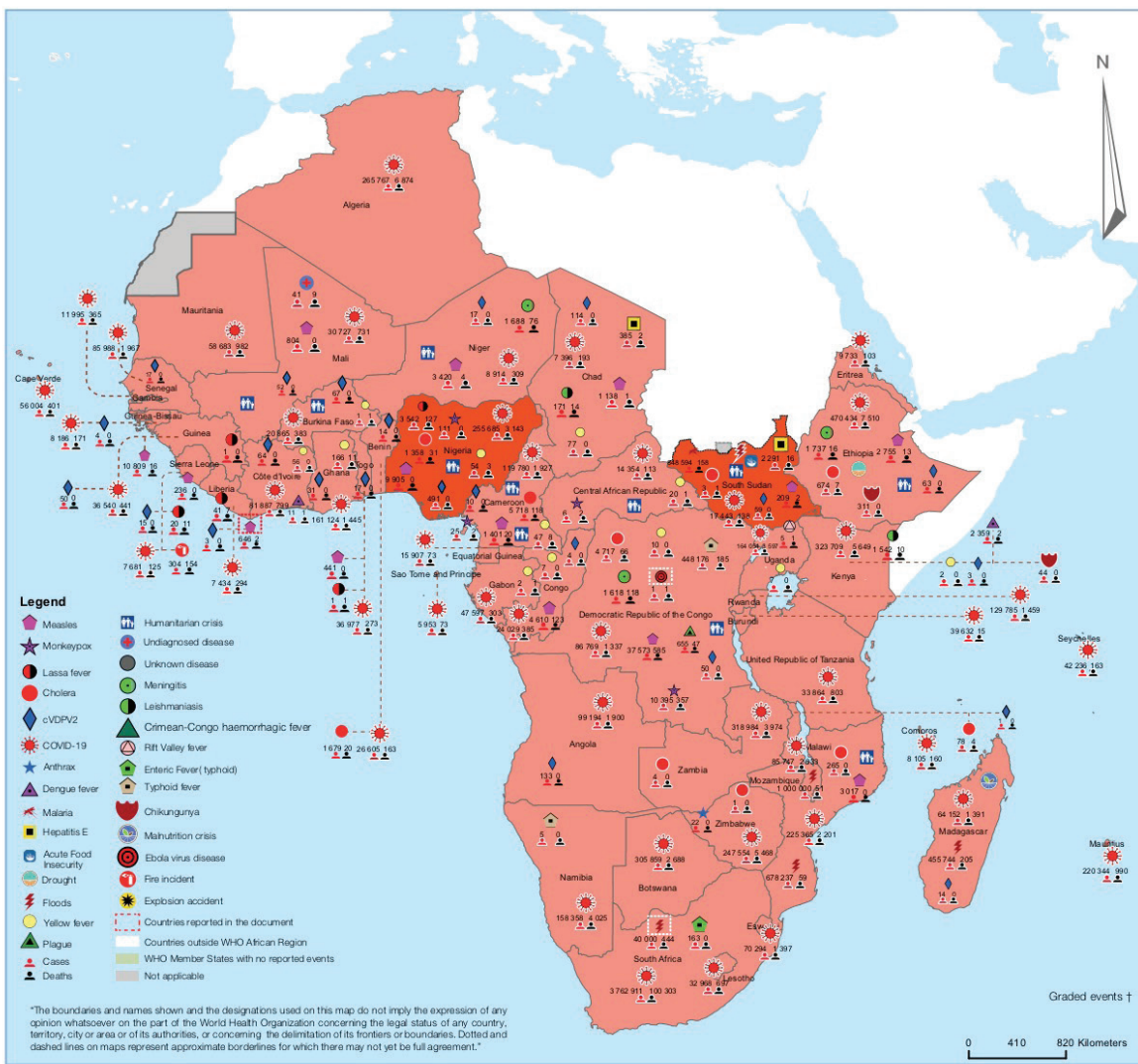
REGIONAL OFFICE FOR **Africa**
WHO Health Emergencies Programme

4 New events

148 Ongoing events

133 Outbreaks

19 Humanitarian crises



3 Grade 3 events	42 Grade 2 events	2 Grade 1 events	50 Ungraded events
3 Protracted 3 events	4 Protracted 2 events	2 Protracted 1 events	

Health Emergency Information and Risk Assessment

Figure 2. 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 140 events. For more information, see link below:
<https://apps.who.int/iris/bitstream/handle/10665/352474/OEW11-0713032022.pdf>

BEYOND OUR BORDERS

The 'Beyond our Borders' column focuses on selected and current regional and international diseases that may affect South Africans travelling outside the country. Numbers correspond to Figure 4 on page X.

Vaccine-preventable disease outbreaks

The World Health Organization has stated its concern surrounding the surge in vaccine-preventable diseases witnessed in Africa over the past year. Between the months of January and March 2022, the African region has recorded almost 17 500 cases of measles, representing a 400% increase when compared to the same period in the previous year, in 20 African countries.

Other vaccine-preventable disease outbreaks have also been reported, including a variant of polio, in twenty-four countries, and new yellow fever outbreaks in 13 countries within the African region.

Health inequalities in access to vaccination as well as the disruptions caused by the COVID-19 pandemic have placed huge strain of health infrastructure in these regions, impairing routine vaccination services in many African countries, resulting in suspension of vaccination drives.

WHO has raised concern over the rise in the number of outbreaks of vaccine-preventable diseases in the African region. "Vaccines are at the heart of a successful public health response, and as countries restore services, routine immunization must be at the core of revived and resilient health systems."

Wild poliovirus: Mozambique

The health authorities in Mozambique have declared an outbreak of the wild poliovirus type 1 on 18 of May 2022. This is after it was confirmed in a child in a north-eastern province; it is the 2nd confirmed case of wild poliovirus in southern Africa following an outbreak reported in mid-February 2022 in Malawi.

The last case was detected in the early 90s. In this particular case the child had an onset of paralysis in late March where the genomic sequencing analysis indicated that this case was linked to a strain circulating in Pakistan, and it was also similar to the case reported in Malawi. Both the Mozambique and Malawi cases do not affect Africa's wild poliovirus-free certification because the virus strain is not indigenous. Africa

was declared free of indigenous wild poliovirus in August 2020, after eliminating all forms of wild poliovirus.

The poliovirus is an enterovirus and there 3 serotypes, namely 1,2 and 3. Immunity to one serotype does not produce significant immunity to other serotypes. It gains entry through the mouth and multiplies in the oropharynx and gastrointestinal tract; it then invades the lymphoid system gaining entry to the bloodstream and infects the central nervous system. The common presenting symptoms can be stiffness of the neck, back or legs, with less than 1% of infected children presenting with flaccid paralysis. The paralysis is often permanent.

Measles: Somalia

A total of 3 509 suspected measles cases has been reported in Somalia, with the majority being in the drought-affected districts. Of these, 249 samples were collected, with 142 samples testing positive, 81% of which were from children below the age of 5 years.

Measles is endemic in Somalia with variations in the numbers recorded annually, with 7 494 cases reported in 2021. Regarding vaccinations, WHO-UNICEF estimates of national immunization coverage for the 1st dose has been approximately 46% for the past 10 years. Somaliland has not yet introduced the 2nd dose (MCV2) as part of routine immunization.

BEYOND OUR BORDERS

Dengue: Brazil

As of 29 April 2022, Brazil reported dengue serotype 2 for the first time in a sample taken in November 2021. Dengue serotypes 1, 2 and 4 have been detected, and health officials have said that the new lineage is not related to the number of dengue cases reported.

Dengue virus is spread through the bite of an infected *Aedes* mosquito (*Aedes aegypti* or *Aedes albopictus*). It can also be

transmitted from an infected pregnant woman to her foetus during pregnancy or birth. Infection induces long-lived immunity for that specific virus serotype. Dengue can be asymptomatic in 1 out of 4 people or could cause mild to severe illness. Clinical signs and symptoms are nausea, vomiting, rash, aches and pains, leukopenia, abdominal tenderness, lethargy, restlessness, and liver enlargement. Treatment is supportive as there are currently no specific antiviral agents.

Source: World Health Organization (who.int); ProMED (promedmail.org); National Institute for Communicable Diseases (nicd.ac.za); Centers for Disease Control and Prevention. (cdc.gov); Outbreak News Today (outbreaknewstoday.com).



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.