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

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COMMUNICABLE DISEASES COMMUNIQUÉ

SEPTEMBER 2023, VOL.22(9)

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EDITORIAL

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In this month's issue of the Communiqué, we reflect on World Rabies Day, which is celebrated on 28 September every year. The theme for this year is "All for One, One Health for All," which highlights the importance of interventions aimed at animal health, to preserve human health. We are happy to report that there have been no new human rabies cases identified in South Africa since our last report in August. The total number of human cases for the year so far still stands at eight cases.

An interesting inclusion in the September issue is a review on the measles outbreak surveillance data reporting from Limpopo Province. In the review, we examine the factors affecting data quality and ways to improve case reporting going forward. The measles outbreak in South Africa is still ongoing and there has been a notable increase in the incidence of cases since epidemiological week 34 (week ending 26 August 2023). We urge all healthcare workers to maintain a high index of suspicion for measles in all provinces and to notify cases using the Notifiable Medical Conditions platform.

Looking beyond our borders, we continue to report on the ongoing cholera outbreaks in the African Region. To date, fifteen countries have reported outbreaks, including some of our neighbouring countries. This highlights the importance of ongoing surveillance for cholera, as the risk of further importation of cases to South Africa remains high.

India is currently experiencing an outbreak of Nipah virus (NiV) infections in humans. In this month's issue, we provide an overview of NiV, the current outbreak in India, as well as a historical overview of previous NiV outbreaks. Although the risk of a NiV outbreak in South Africa is low, the disease is associated with a high mortality rate. Therefore, we urge clinicians to consider NiV in patients returning from the affected areas, who present with signs and symptoms consistent with the disease.

The number of dengue fever cases continues to increase globally, with the World Health Organization (WHO) reporting that cases are still yet to peak. We provide an overview of recent cases in the affected regions, as well as highlight the importance of considering dengue fever as a differential diagnosis in travel-related fevers of unknown origin.

As we approach the end of the year, we would like to thank you for your continued support of the NICD's Communicable Disease Communiqué. The last issue of the Communiqué will be published in December 2023, as we finalise the transition to the Public Health Bulletin of South Africa. More information on this will be provided in next month's issue.

On behalf of the Communiqué editorial team, we hope you enjoy the September edition and wish you a Happy Spring!

QUICK UPDATES

Measles, South Africa

The ongoing measles outbreak, which began in October 2022, has resulted in a cumulative total of 1183 laboratory-confirmed cases (as of 17 September 2023). Three of the eight affected provinces met the criteria to declare the measles outbreak over (Northern Cape Province in week 15, North West Province in week 24, and Free State Province in week 25). North West has since reported sporadic cases. There has been a notable increase in the number of cases reported from epidemiological week 34 (week ending 26 August 2023) to week 37 (week ending 16 September 2023), with the majority of new cases reported from Gauteng (19/38, 50.0%) and KwaZulu-Natal (7/38, 18.4%) provinces.

For updated case numbers and more information on the outbreak, please visit the NICD alerts page (https://www.nicd.ac.za/media/alerts/).

Source: *https://www.nicd.ac.za/south-african-measles-outbreak-update-2023-26-september-2023/*

Cholera, South Africa

Since the cholera outbreak was declared in February 2023, the country has recorded a cumulative total of 199 laboratory-confirmed cases, 1 073 suspected cases and 47 deaths. The latest confirmed case was reported on 25 July 2023. The six affected provinces are as follows: Gauteng, Free State, KwaZulu-Natal, Limpopo, Mpumalanga and North West.

Healthcare workers are urged to maintain a high index of suspicion for cholera in anyone presenting with acute diarrhoeal disease. All suspected cases should be notified immediately using the Notifiable Medical Conditions (NMC) mobile application or website (https://mstrmobile.nicd.ac.za/nmc/), and samples should be submitted to local laboratories for testing. Healthcare workers attending to persons with suspected or confirmed cholera should observe strict contact precautions and hand hygiene, including isolation where possible.

Comprehensive guidelines on management can be accessed using the following link: https://www.nicd.ac.za/assets/files/2014%20SA%20Cholera%20Guidelines.pdf.

For additional information, please visit the NICD website (https://www.nicd.ac.za/diseases-a-z-index/cholera/). For the latest case numbers, please visit the National Department of Health press statement webpage (https://www.health.gov.za/press-statement/).

Sources: *https://www.health.gov.za/wp-content/uploads/2023/07/Health-Department-provides-update-on-cholera-outbreak-in-SA-05-July-2023.pdf, https://www.health.gov.za/wp-content/uploads/2023/07/Health-Minister-announces-another-imported-cholera-case-25-July-2023.pdf*

ZOONOTIC & VECTOR-BORNE DISEASES

World Rabies Day

For the year so far, as of 20 September 2023, there have been eight confirmed human rabies cases in South Africa, with cases identified in the provinces of KwaZulu-Natal (n=4), Eastern Cape (n=3) and Limpopo (n=1). Since 10 August 2023 to date, no new human cases have been documented in the country. South Africa reported an average of thirteen cases per year (ranging from 1 to 31) for the period 1983-2022, 70% of which were in children under the age of 16 years. In the recent years from January 2019 until September 2023 (nearly a five-year period), 77 cases of human rabies, including 58 laboratory-confirmed and 19 probable cases, were reported for South Africa (Figure 1). These cases were recorded from the following provinces: Eastern Cape (n=33), KwaZulu-Natal (n=30) and Limpopo (n=14).

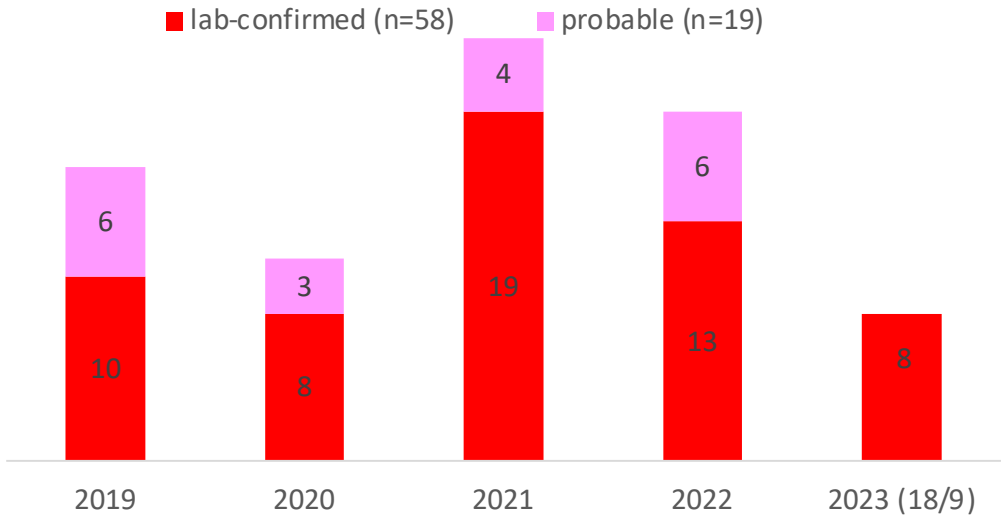

Figure 1. Laboratory-confirmed and probable human rabies cases for South Africa, January 2019 - 18 September 2023 (NICD-NHLS data source)

Every year on 28 September, World Rabies Day is celebrated internationally to promote the fight against this disease and raise public awareness around prevention. Rabies is a zoonotic disease with a near 100% fatality rate. The rabies virus is transmitted to humans mainly by dogs, but also (although very rarely) by other animal species such as cats, wildlife, and livestock. The disease is endemic on several continents and is estimated to claim the lives of 60 000 people worldwide each year, most of whom are children. Despite being the "incurable scourge," rabies is preventable in humans and can be controlled in animals such as domestic dogs. The latter is the most important, affordable, and effective intervention for rabies. This year's World Rabies Day theme of "All for One, One Health for All" emphasises the important link between animal and human health and shows how interventions aimed at animal health can preserve human health. Vaccination of domestic dogs is required by law in South Africa and is the responsibility of the pet owner. Rabies vaccination is available via different sources in South Africa, including private veterinary health care services, welfare services offered by many non-profit organisations and government veterinary services. Access to the latter two types of services is often provided through community vaccination campaigns, community clinics, etc. Please visit the NICD website (www.nicd.ac.za) and the Global Alliance for Rabies Control website (www.rabiesalliance.org) for more useful information on rabies.

Figure 2. Global Alliance for Rabies Control, World Rabies Day theme (http://rabiesalliance.org)

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

VACCINES AND IMMUNOLOGY

Review of measles outbreak surveillance data reporting and factors affecting public health response in Limpopo Province - August 2023

The Limpopo Department of Health, with the support of the National Institute for Communicable Diseases (NICD), reviewed the information on laboratory-confirmed measles cases to assess factors that affected the measles outbreak public health response. The assessment was done using measles case investigation forms (CIFs) to document cases with a missing vaccination history and measles infection outcome.

Ten healthcare facilities that reported a high number of measles cases were visited during the support visit which included five hospitals and five primary healthcare facilities (PHCs) (Table 1). It was found that in hospitals, there was either an Expanded Programme on Immunization (EPI) or Infection Prevention and Control (IPC) practitioner responsible for coordinating the activities of the measles outbreak response. Contrarily, only one PHC of the five had a focal point person for the management of measles cases. Four of the five hospitals had a file for vaccine-preventable diseases surveillance (VPDs), which facilitated the investigation of the missing information.

Our findings indicated that hospitals had more measles cases notified on the Notifiable Medical Condition Surveillance System (NMCSS) compared to blood samples sent to the laboratory for testing. PHCs reported fewer measles cases on the NMCSS than the cases that were consulted. Hospitals with IPC and EPI managers had better data compared to PHCs. The presence of a focal person in the facility substantially improved measles case reporting and CIF availability.

It is therefore recommended that focal people at PHCs are appointed and trained for the surveillance of VPDs and outbreak response to improve case detection, reporting and data quality needed for public health response.

Table 1. Equating health facilities with IPC/EPI focal persons with the availability of measles outbreak surveillance data collection components, Limpopo Province: August 2023

Districts/facilities supported	Focal person(EPI/IPC)	VPDS file / linelist	CIFs on 1st visit	Measles Cases (n)	NMCSS Notification
Waterberg					
Hospital A	Yes	Yes	Yes	64	149
Hospital B	Yes	No	No	26	15
Clinic A	No	No	Yes	41	3
Clinic B	No	No	Yes	23	5
Greater Sekhukhune					
Hospital 1	yes	Yes	Yes	60	63
Clinic 1	No	No	Yes	12	1
Clinic 2	No	No	No	35	32
Mopani					
Hospital I	Yes	Yes	Yes	18	26
Hospital II	Yes	Yes	Yes	18	28
Clinic I	Yes	No	Yes	13	13
Totals				**310**	**335**

**Data available but <5 CIFs

Source: Limpopo Department of Health; Centre for Vaccines & Immunology, NICD-NHLS; matimbam@nicd.ac.za, jackm@nicd.ac.za, niship@nicd.ac.za

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.

Cholera – African Region

As of 15 September 2023, a total of 28 countries have reported cholera cases globally since the beginning of 2023, including the following fifteen countries in the African Region: Burundi, Cameroon, the Democratic Republic of the Congo, Ethiopia, Eswatini, Kenya, Malawi, Mozambique, Nigeria, South Africa, South Sudan, Tanzania, Uganda, Zambia, and Zimbabwe.

The capacity to respond to these outbreaks continues to be strained due to the large number of outbreaks globally and, in some countries, simultaneous outbreaks of other diseases. Based on multiple factors, including the number of outbreaks, geographic expansion and the lack of availability of cholera vaccines and other resources, the World Health Organization (WHO) continues to assess the risk of cholera as very high at the global level.

For South Africa, further importation of cholera cases remains a risk due to the ongoing cholera outbreaks in the Southern African Region. Healthcare workers are urged to maintain a high index of suspicion for anyone presenting with acute diarrhoeal disease and to notify all suspected cases using the Notifiable Medical Conditions (NMC) mobile application or website (https://mstrmobile.nicd.ac.za/nmc/). For more information on cholera, please visit the NICD website: https://www.nicd.ac.za/diseases-a- z-index/cholera/.

Table 2. Cholera Cases and Deaths in the African Region, 1 January 2022 to 27 August 2023 *excluding South Africa as case numbers already published in the "Quick Updates" section of the Communiqué.

Country	Cumulative Cases	Cumulative Deaths	CFR (%)	Date outbreak started	Last update
Malawi	58 986	1 768	3.0	Mar 2022	27 Aug 2023
Democratic Republic of Congo	51 664	591	1.1	Jan 2022	20 Aug 2023
Mozambique	34 118	144	0.4	Sep 2022	27 Aug 2023
Nigeria	26 072	656	2.5	Jan 2022	30 Jul 2023
Cameroon	19 451	457	2.3	Jan 2022	27 Aug 2023
Ethiopia	19 277	252	1.3	Aug 2022	27 Aug 2023
Kenya	12 061	200	1.7	Oct 2022	27 Aug 2023
Zimbabwe	3 894	96	2.5	Feb 2023	27 Aug 2023
South Sudan	1 471	2	0.1	Feb 2023	16 May 2023
Zambia	787	14	1.8	Jan 2023	20 Aug 2023
Burundi	668	9	1.3	Jan 2023	27 Aug 2023
Uganda	78	10	11.7	Jul 2023	27 Aug 2023
United Republic of Tanzania	376	4	1.1	Feb 2023	30 Jul 2023
The Kingdom of Eswatini	2	0	0	Mar 2023	23 Jul 2023

Source: Outbreak Response Unit, NICD-NHLS; https://apps.who.int/iris/bitstream/handle/10665/372811/OEW34-2127082023.pdf

BEYOND OUR BORDERS

Nipah virus

India's southern state of Kerala has been experiencing an outbreak of Nipah virus (NiV) infections since August 2023, with six human cases and two deaths recorded as of 21 September 2023 (CFR=33.3%). This is the fourth outbreak of NiV infections in Kerala since NiV was first discovered in Nipah village, Malaysia, in 1998. Figure 3 shows a timeline of NiV outbreaks thus far.

NiV infection is caused by the zoonotic Nipah virus, an RNA virus of the *Henipavirus* genus of the *Paramyxoviridae* family. The *Pteropus* fruit bat (also known as the flying fox) is the natural animal reservoir for the virus. There are approximately 60 species of these bats found in Asia, Australia, some parts of Africa and the Pacific Islands. Historically, pigs have acted as a mediator host for the virus between fruit bats and humans. Pigs become infected with the virus through direct or indirect contact with infected fruit bats and in turn, infect humans. Human-to-human transmission is then possible via salivary droplets, urine, or blood. Outbreaks in Bangladesh have also been attributed to drinking raw or unfermented date palm sap contaminated by infected fruit bats. Figure 4 describes the transmission cycle of the virus.

Once infected, the clinical presentation displayed in humans ranges from asymptomatic infection to prodromal respiratory, or neurological symptoms. As seen in the current Kerala outbreak, NiV infection is associated with a high case-fatality rate, with death usually caused by encephalitis. A study done in Bangladesh looking at 14 years of data showed that although Nipah virus can be deadly, it has a low reproduction number of 0.33, suggesting that transmission of infections can be contained with the appropriate infection-control measures.

Previous outbreaks of Nipah virus infections have occurred in Malaysia, India, Bangladesh and the Philippines, and the outbreaks have remained isolated to those regions. Nipah virus infections have never been reported in South Africa, so the risk to this country remains low. Keeping in mind lessons learned from the COVID-19 pandemic - in that, as part of the global community, one country cannot feel at ease when other countries are not - healthcare workers in South Africa should be on alert for suspected NiV cases in persons presenting with symptoms consistent with the diseases and with a history of travel to areas where NiV outbreaks are reported.

NICD's Centre for Emerging Zoonotic and Parasitic Diseases and Centre for Respiratory Diseases and Meningitis have defined a suspected case of Nipah virus infection as any person presenting with:

Any person presenting with

- an acute onset of fever (≥38°C) with new onset of altered mental status or seizure and/or
- fever with headache and/or
- cough or shortness of breath;

AND has an epidemiological link

- who visited or resided in Kerala, India, or a community affected by a NiV disease outbreak (https://www.cdc.gov/vhf/nipah/outbreaks/distribution-map.html), in the six weeks prior to onset of illness and;
- had direct contact with or cared for suspected/confirmed NiV cases (humans/pigs) in the six weeks prior to onset of illness;

NOTE: The differential diagnoses for travelers from South Asia or South-East Asia is broad and malaria, dengue, chikungunya, zika, leptospirosis, typhoid and common respiratory infections should be excluded in patient.

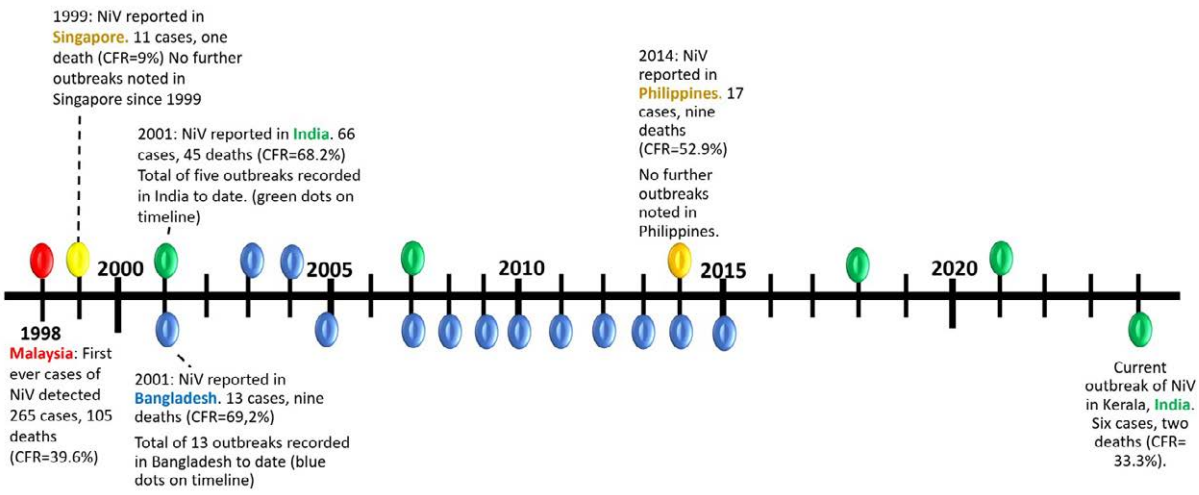

Figure 3. Timeline of Nipah virus outbreaks

BEYOND OUR BORDERS

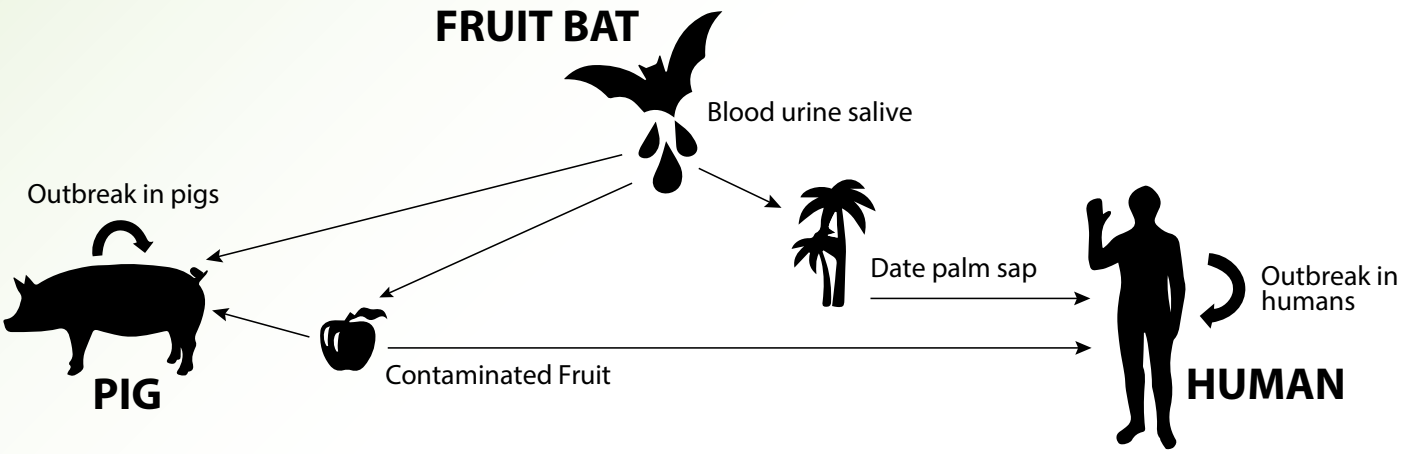

Figure 4. Nipah virus transmission cycle

Sources: Outbreak Response Unit, NICD-NHLS; Centre for Emerging Zoonotic and Parasitic Diseases, NICD-NHLS; Centre for Respiratory Diseases and Meningitis, NICD-NHLS; https://theconversation.com/nipah-virus-outbreak-in-india-what-you-need-to-know-213692, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7169151/, https://www.aljazeera.com/news/2023/9/13/nipah-virus-outbreak-in-india-what-you-need-to-know-about-viral-disease, https://www.iol.co.za/news/south-africa/western-cape/what-is-nipah-virus-and-should-south-africans-be-worried-10e68e32-551b-46c8-a855-6c212e8f4c77, https://www.theguardian.com/world/2023/sep/18/what-is-nipah-virus-kerala-india-bat-borne-outbreak-mass-testing, https://www.nejm.org/doi/full/10.1056/NEJMoa1805376, https://www.jenner.ac.uk/research/emerging-pathogens/nipah

Dengue fever – global

Dengue infections continue to increase globally, with the World Health Organization (WHO) reporting that the outbreaks are yet to peak. The following is a summary of dengue reports globally:

- **Central America and the Caribbean:** Between 1 January 2023 and 3 September, 3 407 921 dengue fever cases were reported (343/100 000 population). Brazil has the highest number of reported cases (n=2 569 746), followed by Peru (n=235 014) and Bolivia (n=137 110). Looking at previous seasonal patterns of dengue in the region as well as current rainfall, the Pan American Health Organization/World Health Organization (PAHO/WHO) noted a significant increase in dengue cases during the second half of 2023. This includes an increase in reports of locally transmitted cases from the Bahamas and the United States. The higher burden of dengue cases has resulted in a higher burden on health systems in the affected areas, with some countries having declared health emergencies due to dengue.
- **Europe:** As of 16 September 2023, France had reported three clusters of autochthonous cases of dengue fever. The first case of dengue fever in Italy was reported in August 2023. Between August 2023 and 11 September 2023, 19 locally acquired dengue fever cases have been reported. The European Centre for Disease Prevention and Control (ECDC) expects further autochthonous cases to occur in the southern countries of the European Union, where the mosquito vector is present.
- **Asia:** Between 1 January 2023 and 11 September 2023, 148 328 confirmed dengue cases and 730 dengue-related deaths were reported in Bangladesh (CFR=0.49%). Epidemiological week 36 (week ending 9 September 2023) showed a 14.2% increase in dengue fever incidence compared to the previous week. Thailand has also shown an increase in cases per week as of 21 September 2023, with a cumulative incidence of cases for 2023 of approximately 92 000.
- **Africa:** Chad officially declared an outbreak of dengue infections on 15 August 2023. Côte d'Ivoire reported their outbreak on 19 June 2023. Ethiopia and Mauritius have also reported outbreaks this year. Burkina Faso has reported over 11 500 cases in 2023, with the weekly incidence increasing as of 21 September 2023.

Globally, response and control measures include vector control; education of public and healthcare providers, and personal infection prevention measures. Local transmission of dengue has not been reported in South Africa in 2023. Clinicians should continue to maintain a high index of suspicion for dengue fever in anyone returning from dengue-endemic regions beyond our borders and presenting with signs and symptoms of the disease.

Sources: Outbreak Response Unit, NICD-NHLS; https://www.ecdc.europa.eu/sites/default/files/documents/communicable-disease-threats-report-week-37-2023.pdf; https://reliefweb.int/report/world/epidemiological-alert-increase-dengue-cases-central-america-and-caribbean-15-september-2023; https://reliefweb.int/report/niger/weekly-bulletin-outbreaks-and-other-emergencies-week-36-4-10-september-2023-data-reported-1700-10-september-2023; https://cdn.who.int/media/docs/default-source/searo/bangladesh/dengue-sitrep/dengue-sitrep-issue-3.pdf?sfvrsn=4832eec1_1&download=true; Travex News Alert 21 September 2023.

WHO AFRO UPDATE

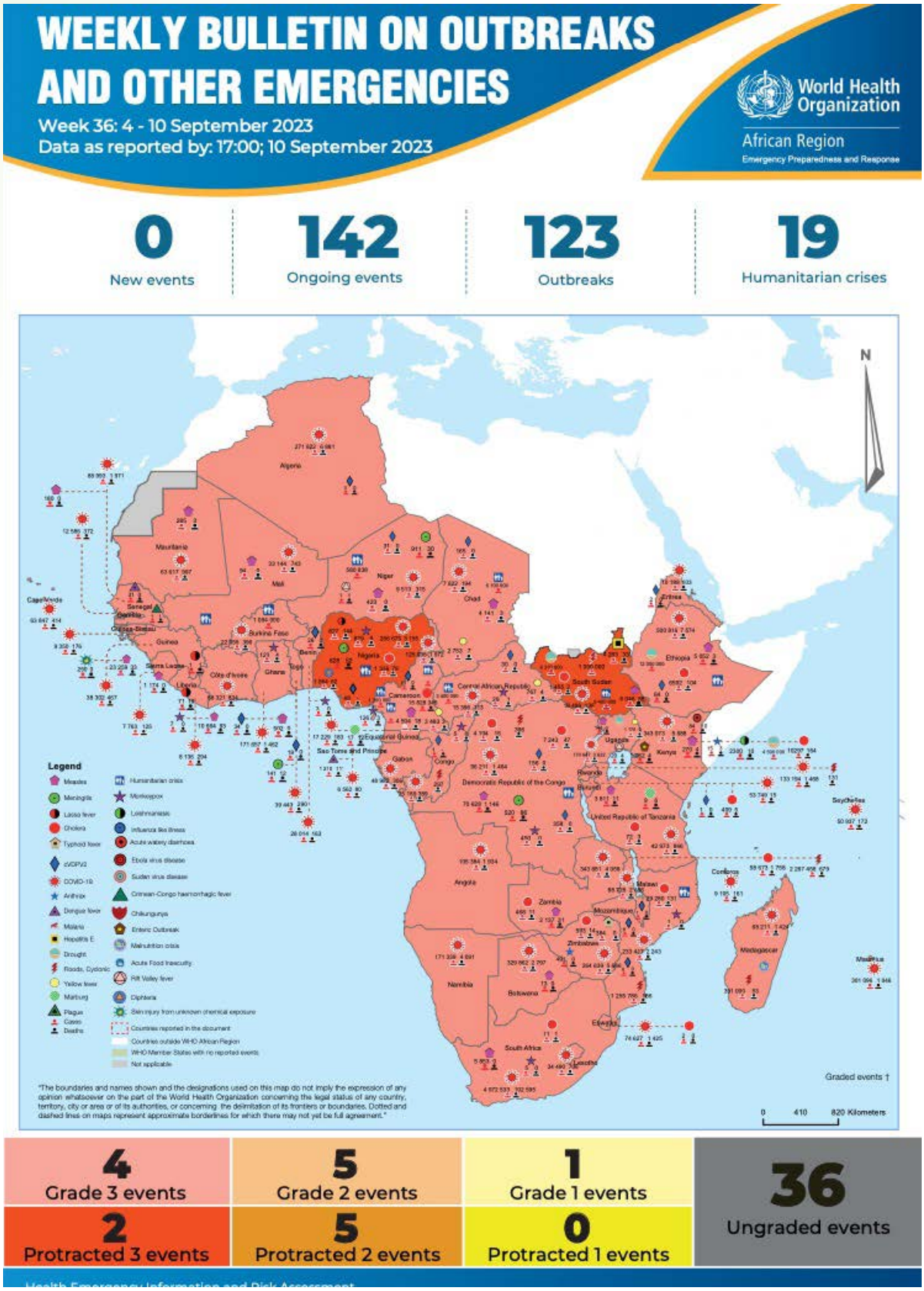

Figure 5. The Weekly WHO Outbreak and Emergencies Bulletin focuses on selected public health emergencies occurring in the WHO African Region. The African Region WHO Health Emergencies Programme is currently monitoring 142 events. For more information, see the link below: https://www.afro.who.int/health-topics/disease-outbreaks/outbreaks-and-other-emergencies-updates.