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

COMMUNICABLE DISEASES

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COMMUNIQUÉ

CONTENTS

Editor's Note

Prof John Frean

As this issue of the Communique goes out, the first and second recognised cases of monkeypox in South Africa have been confirmed, and the country joins the ranks of affected nations. As we report here, more than 2 500 cases have been diagnosed in at least 36 non-endemic countries. While there has been a groundswell of warnings over the last few decades of the high likelihood of emerging zoonotic pathogens causing international outbreaks of disease (SARS, MERS, and COVID-19 being obvious examples), the monkeypox situation is a new variation on this theme, not only in terms of the type of virus (an orthopox virus, in the same taxonomic group as smallpox and cowpox), but also in the nature of transmission (close physical contact) and the population apparently mainly at risk, namely men who have sex with men (MSM). Prior to the current situation, human infections in endemic areas, with spillover in the form of imported cases, are well recognised and have been increasing recently in some places. The international trade in exotic pet animals previously also resulted in human cases. The natural epidemiology of monkeypox is not fully understood; despite its name, nonhuman primates may not be the main reservoir hosts, and rodents, squirrels and other wild animals in Central and West African nations, are probably involved. For more information on monkeypox and the outbreak responses to confirmed monkeypox cases, please visit the NICD website (www.nicd.ac.za/monkeypox).

While monkeypox may be grabbing the headlines, another viral illness is of much more immediate importance in Gauteng Province at this time. An outbreak of measles has been reported in Tshwane District, with four epidemiologically-linked cases identified. Although their measles vaccination status is reported as unknown, it is likely that these children, aged 10 to 17 years, were unvaccinated or not fully vaccinated. A high rate of vaccination in the population is required to prevent outbreaks, because the virus is so highly transmissible. Active contact tracing and ring vaccination are strategies to contain the spread of measles, and as the report emphasises, there are no age-related restrictions on vaccination.

Other communicable diseases of local importance covered in this issue are rabies, rotavirus, influenza, and respiratory syncytial virus infections, while on the international scene, Ebola virus, dengue, Crimean-Congo haemorrhagic fever, and hepatitis of unknown origin are featured. All these certainly make for an interesting viral disease-themed issue for our readers.

Measles outbreak in Tshwane D istrict, Gauteng Province, June 2022 update

As of 22 June 2022, four laboratory-confirmed epidemiologically linked measles cases were reported in the City of Tshwane, attending the same home school facility. The measles cases ranged in age from 10-17 years, affecting one female and three males. Additionally, one measles case detected in West Rand District was suspected to be linked to the Tshwane cases, but health authorities did not have epidemiological evidence to support the link. The measles vaccination status of all four cases was unknown.

The City of Tshwane and provincial health officials conducted public health investigations and responses for all laboratory-confirmed measles cases notified by the National Institute for Communicable Diseases. A measles vaccination campaign is underway at the schools where the measles outbreak occurred.

Schools, crèches, and health facilities should be on alert for measles cases. Clinicians should notify suspected measles cases on the NMC system; https://www.nicd.ac.za/nmc-overview/overview/. Record reviews should be carried out in healthcare facilities for enhanced measles surveillance in an effort to identify missed measles cases. Clinicians and caregivers should check children's vaccination records to ensure measles vaccinations are up to date. Measles vaccines are given routinely at 6 and 12 months of age. It is never too late to vaccinate against measles.

Measles is highly infectious and spreads rapidly from person to person. Unvaccinated persons of any age are at risk of measles. Measles symptoms include fever, rash(maculopapular non-itchy), cough, conjunctivitis, and a runny nose. Other measles complications include pneumonia, scarring of the cornea (kerato-conjunctivitis), and encephalitis.

Source: Centre for Vaccine and Immunology, NICD. Gauteng Province Department of Health: Jackm@nicd.ac.za

ZOONOTIC AND VECTOR-BORNE DISEASES

Monkeypox- multi-national outbreak

Monkeypox was laboratory confirmed in a 30-year -old male from Gauteng Province, and in a 32-year-old male in the Western Cape Province. They reported no recent travel history. Contact tracing is underway to assist in identification of any additional cases in country. The risk of monkeypox to the general South African public is considered low.

As of 13 May 2022 to date, monkeypox has been confirmed in 36 countries where the virus is not historically known to be present. At 20 June 2022, a total of 2 544 confirmed cases has been laboratory confirmed. The outbreak is unprecedented as it presents the first, simultaneous outbreak of monkeypox involving several countries where the virus is not historically known to be present (non-endemic countries/regions). It is also already the largest outbreak of monkeypox outside of countries that have historically reported monkeypox. The epidemiological links of cases are still under investigation however, there is also evidence suggesting the involvement of large social gatherings, which may have served as super-spreader events. International travel histories are reported for many, but not all of the cases. Nearly all cases (approximately 98%) reported to date involve men in the age range (interquartile range) of 32-43 years. More than 80% of cases have been reported from Europe, with the largest number of cases reported from the United Kingdom (n=574), Spain (n=497), Germany (n=338) and Portugal (n=276). In addition, cases of monkeypox have been reported during 2022 to date, from several countries where it has been historically reported, including Democratic Republic of Congo, Nigeria, Central African Republic, Cameroon, Ghana and Liberia.

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 that are often found on the face and extremities (including the soles of the feet and palms of the hands). The lesions may also be found on the mouth, genitalia and the 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 have historically been reported in children, pregnant women and those living with untreated and poorly managed HIV disease. A typical presentation of the disease has also been noted and as a result, some cases may go undetected. Cases are diagnosed on the presence of the characteristic rash (with due consideration for other more common rash-associated diseases) 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, but not limited to, other causes of rash illness including chickenpox, herpes, measles, bacterial skin infections (such as staphylococcus infections), syphilis (particularly secondary syphilis) and non-infectious etiologies such as drug allergies. Although there are a number of suggested anti-viral therapies for monkeypox, most cases will not require such intervention and management is supportive. The World Health Organization released the interim guidance for use of vaccines against monkeypox, in which mass vaccination is not recommended currently for outbreak management (see https://apps.who.int/iris/bitstream/handle/10665/356120/WHO-MPX-Immunization-2022.1-eng.pdf).

For more information on monkeypox and the outbreak responses to confirmed monkeypox cases visit the NICD website (www.nicd.ac.za/monkeypox).

Source: Centre for Emerging Zoonotic and Parasitic Diseases, NICD-NHLS; jacqulinew@nicd.ac.za, https://monkeypoxreport.ecdc.europa.eu/

ZOONOTIC AND VECTOR-BORNE DISEASES

An update on rabies in South Africa

Since the previous report, one additional case of human rabies has been confirmed in South Africa. This case was reported from the Eastern Cape Province (Nelson Mandela Bay District), bringing the total number of confirmed cases in the country to eight for 2022 (up to 20 June). The cases were reported from Limpopo (n=3), KwaZulu-Natal (n=1) and the Eastern Cape (n=4) provinces. In addition to the confirmed cases, four probable human rabies cases were recorded from the Eastern Cape Province.

Of the eight confirmed cases, a total of 7 cases were linked to domestic dog exposures. One case involved exposure to a domestic cat, and for one case no exposure history was apparent. Five of the cases involved children and adolescents (age range 4-14). Apparently, six of the cases did not seek medical intervention following exposure. This may be indicative of the lack of appreciation of the risk of rabies in communities and a target for health education efforts. In one case, no rabies immunoglobulin was provided and the vaccination schedule was not completed (only two doses of vaccine were received). Rabies post-exposure prophylaxis (PEP) is a lifesaving intervention. Prompt delivery of PEP is crucial. The wound site(s) should be washed thoroughly with soap and water. This can be done before visiting a health care facility and should be a teaching point in affected communities. Wound washing may be repeated at the health care facility and thorough irrigation of the wound is recommended. Rabies vaccination requires the administration of four doses of vaccine via the intramuscular route, one dose each on days 0, 3, 7 and any day from 14-28 (day 0 is the day of presentation to the health care facility). Rabies immunoglobulin if provided through infiltration into and around the wound or wound sites (covering all wounds) is essential. For more information on the prevention of rabies in humans, please visit the NICD website (www.nicd.ac.za/rabies).

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

Ebola virus disease – an update

On 23 April 2022 the Democratic Republic of the Congo (DRC) declared an EVD outbreak after the detection of a laboratory-confirmed two days prior. A second case, who also demised and was a family member of the first case, was confirmed on 25 April 2022. Since 27 April 2022, a total of 267 contacts has been identified and further investigations are ongoing. This is the third outbreak in this north-western Equateur Province since 2018 and the 14th outbreak in the DRC since 1976.

Community vaccinations have begun on 27 April 2022 through a ring vaccination strategy in Mbandaka. Surveillance, early identification and an effective outbreak response is vital in controlling the spread of EVD and preventing fatalities.

Source: Outbreak Response Unit, NICD-NHLS

World Health Organization – Ebola Virus Disease- Democratic Republic of the Congo (https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON377)

ENTERIC DISEASES

Rotavirus

Rotavirus is a common childhood diarrhoeal infection with a seasonal pattern, peaking during the cooler, drier months of the year. Rotavirus is transmitted via the fecal-oral route with children <2 years primarily affected. Clinical symptoms include the sudden onset of vomiting followed by watery diarrhoea, which may result in severe life-threatening dehydration. Since rotavirus vaccine introduction in 2009, the annual rotavirus season in South Africa occurs from late June to mid-August. The rotavirus season usually starts in the Western Cape and migrates towards Gauteng and Mpumalanga provinces a few weeks later. Diarrhoeal syndromic surveillance is conducted at three sites as part of the NICD GERMS-SA platform (Pelonomi Hospital, Free State; Klerksdorp/Tshepong hospitals North West; and Red Cross Children's Hospital, Western Cape) as well as three additional sites as part of the ANDEMIA project (Kalafong Hospital, Gauteng; Mapulaneng and Matikwane hospitals;,Mpumalanga). The surveillance targets all patients presenting with diarrhoea at participating sites. Stool samples are collected for molecular testing for enteric viruses, bacteria and parasites. While the 2020 season was very low (6%; 19/338), the 2021 season recorded a 15% rotavirus prevalence (114/761) driven by G2P[4] strains. Recently, rotavirus was detected in specimens from the Western Cape (6%; 8/139), mostly G3P[8] strains. The detection in the Western Cape Province indicates that the rotavirus season 2022 cases will be increasing soon. Healthcare providers are reminded that children should receive rotavirus vaccine at 6 and 14 weeks of age, and that children who have missed rotavirus vaccination can be vaccinated until 8 months of age. In addition, adequate supplies of oral rehydration solution should be ensured.

Source: Centre for Enteric Diseases, NICD-NHLS; lindae@nicd.ac.za

RESPIRATORY DISEASES

Influenza season update

As of 3 January 2022 to 12 June 2022 (week 23), 128 cases of influenza have been detected from pneumonia surveillance (public hospitals) sentinel sites. Of these, 104 (81%) were influenza A(H1N1)pdm09, 18(14%) influenza A(H3N2), 1(1%) influenza A(subtype inconclusive), 4(3%) influenza A(pending results), 1(1%) influenza B(Victoria) (Figure1). The 2022 influenza season started in week 17 (week starting 25 April 2022), when the detection rate among patients in pneumonia surveillance breached the epidemic threshold as determined by the Moving Epidemic Method (MEM) and in week 23, the impact was low (Figure 2). The majority of the cases were males (68/128, 53%), enrolled from Gauteng sentinel sites (35/128, 27%) and were children under 5 years old (63/128, 49%) (Figure 3).

In the majority of otherwise healthy young persons, influenza is an uncomplicated infection, and in rare events healthy individuals may present with severe influenza illness or complications. Complications of influenza, e.g. pneumonia, are more common in pregnancy, in persons over 65 years of age, those with other health conditions, for example those affecting the heart or lung, diabetics, or persons with a weakened immune system. Clinicians are reminded to encourage patients at increased risk for severe influenza illness and complications to be vaccinated for influenza.

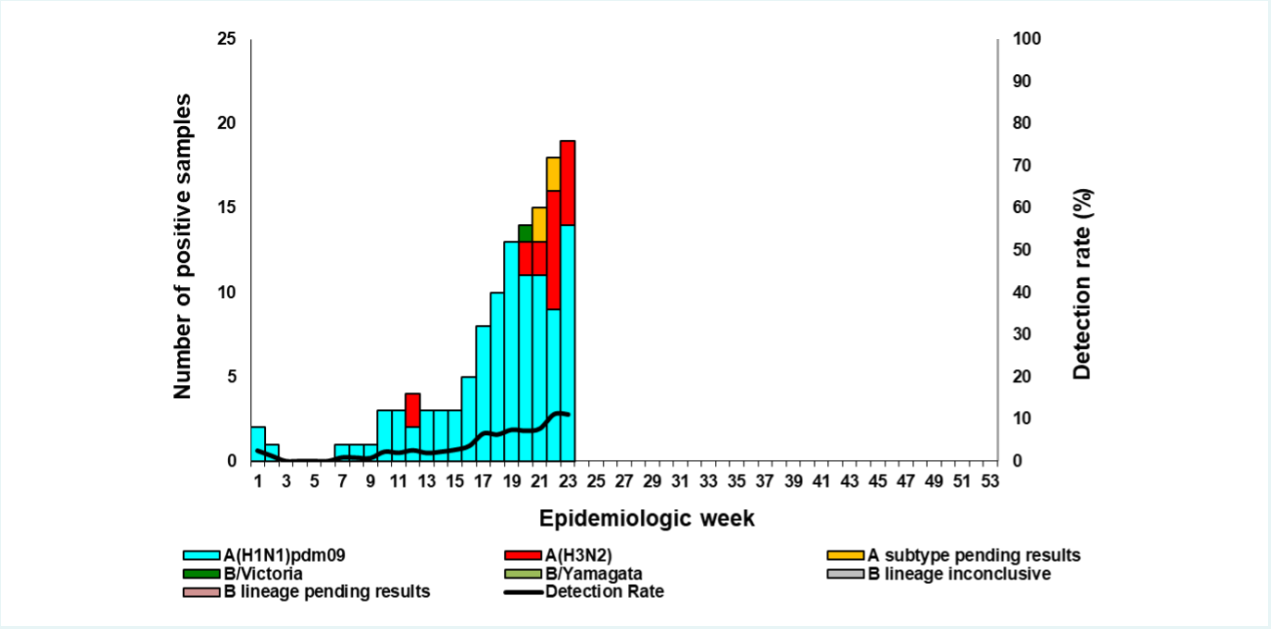

Figure 1. Number of positive influenza positive cases by influenza subtype and lineage and detection rate by week, pneumonia surveillance public hospitals, 03/01/2022 – 12/06/2022

RESPIRATORY DISEASES

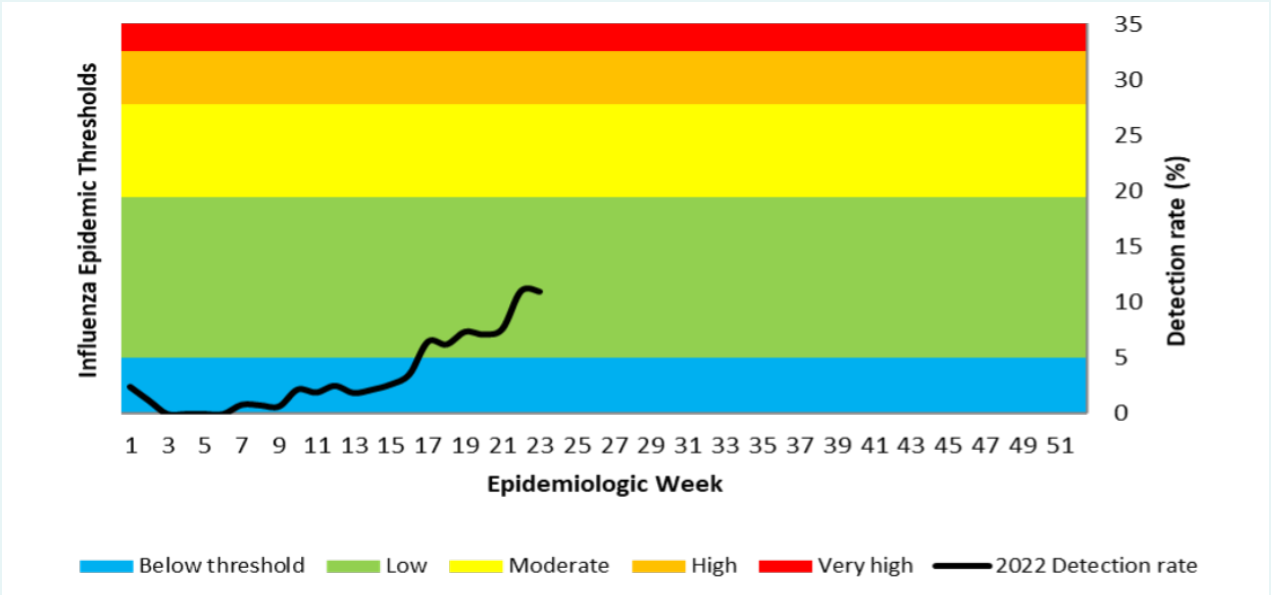

Figure 2. Influenza percentage detections and epidemic thresholds* among cases of all ages, pneumonia surveillance public hospitals, *based on 2010-2019 data

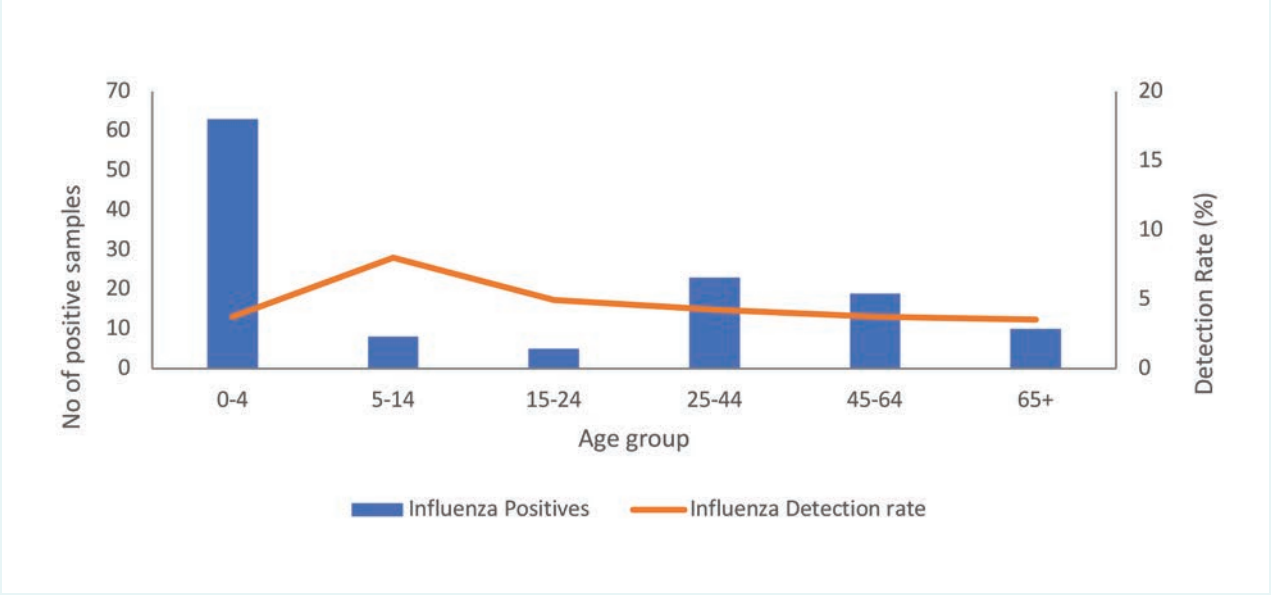

Figure 3. Number of patients (all ages) testing positive for influenza by age-group and detection rate, pneumonia surveillance public hospitals, 03/01/2022 – 12/06/2022

RESPIRATORY DISEASES

Respiratory syncytial virus (RSV) season update

The 2022 RSV season, which started in week 7 (week starting 14 February 2022) and peaked in week 17 (week starting 25 April 2022) is ongoing, although the numbers of cases testing positive per week continue to decline. RSV activity among children <5 years is currently at the low level (figure 4). As of week 23 of 2022, 661 RSV cases were detected among cases of all ages admitted with lower respiratory tract illness at pneumonia surveillance sentinel sites. Of which, RSV A was 30% (196/661), RSV B 64% (424/661), RSV AB 1% (3/661), RSV subgroup inconclusive 2% (15/661) and RSV subgroup results were pending for 3% (23/661). The majority of RSV positive cases were from the Western Cape Province surveillance site (270/661, 41%) and were in children below 5 years of age (612/661, 93%) (Figure 5 and Figure 6).

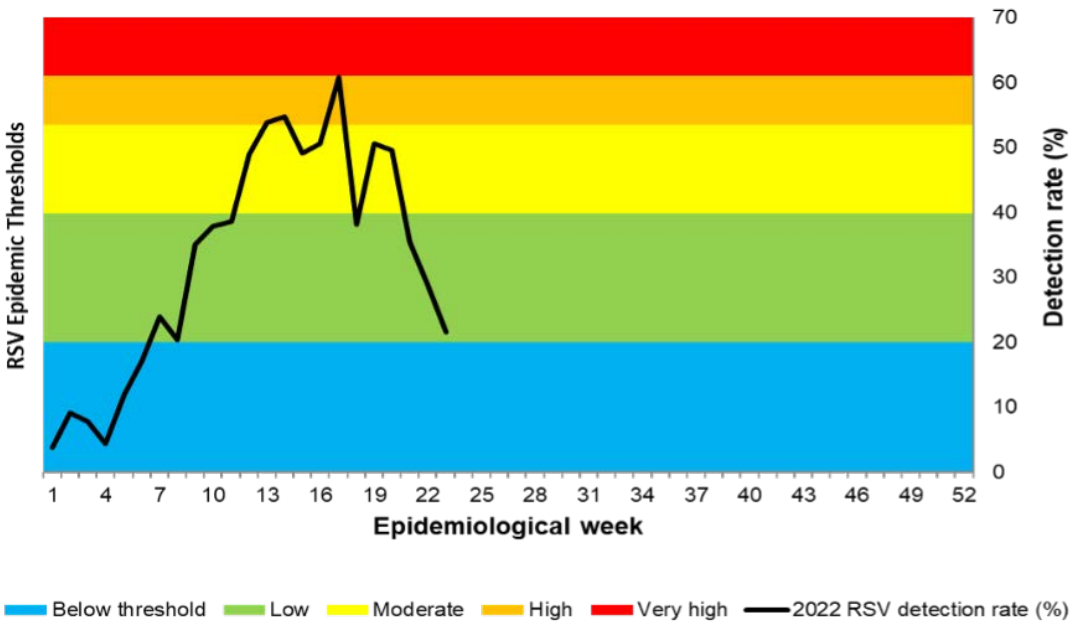

Figure 4. RSV percentage detections and epidemic thresholds* among children aged < 5 years, pneumonia surveillance public hospitals, *based on 2010-2019 data

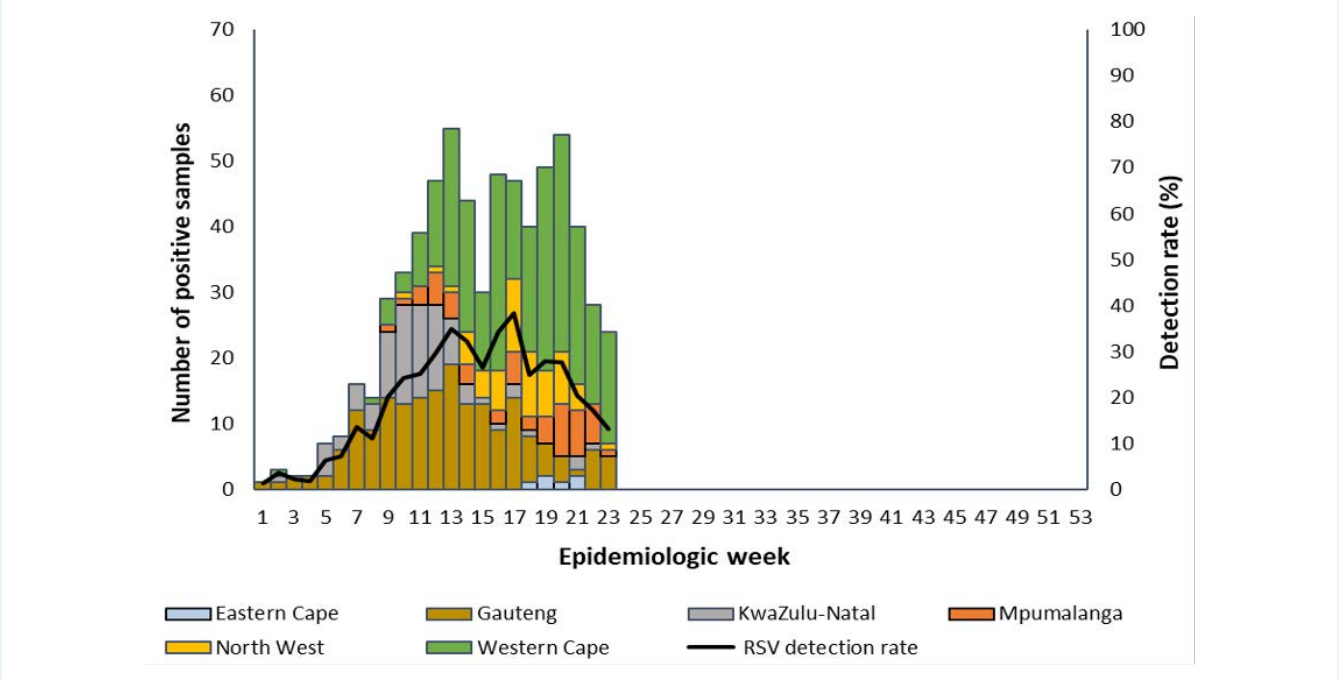

Figure 5. Number of patients (all ages) testing positive for respiratory syncytial virus by province and detection rate by week, pneumonia surveillance public hospitals, 03/01/2022 – 12/06/2022

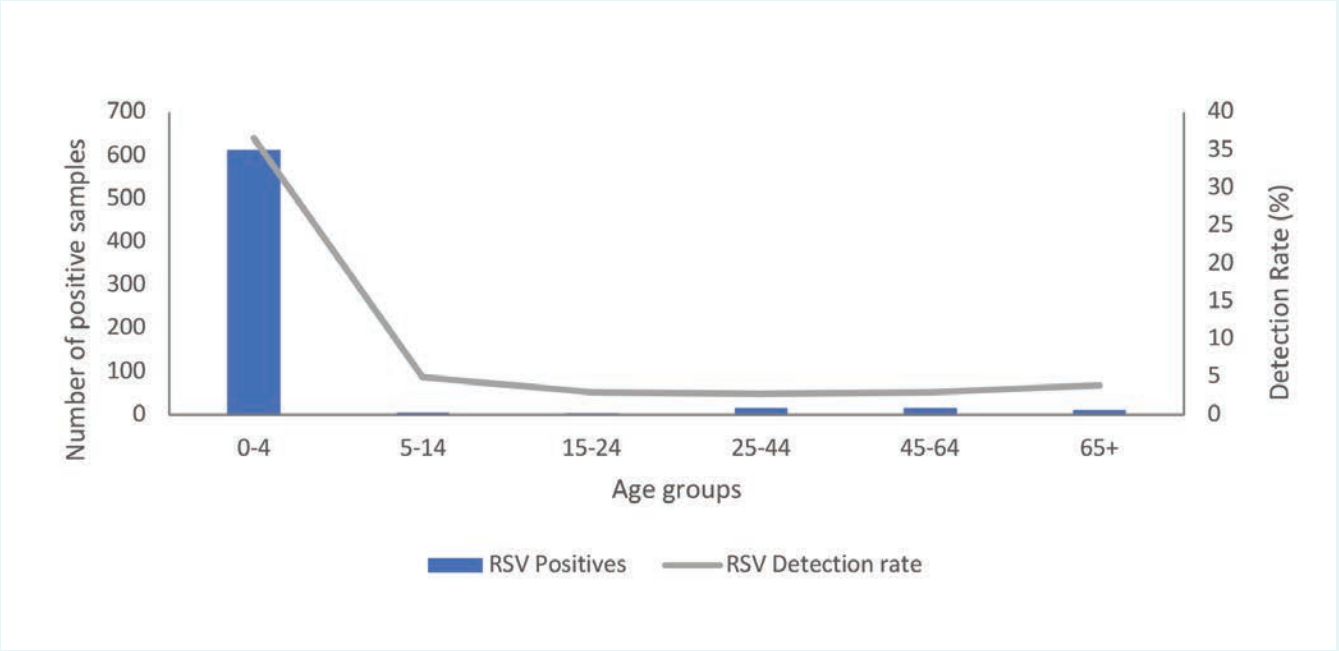

Figure 6. Number of patients (all ages) testing positive for RSV by age-group and detection rate, pneumonia surveillance public hospitals, 03/01/2022 – 12/06/2022

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 7 on page 11.

Acute hepatitis of unknown origin

Acute, severe hepatitis of unknown origin refers to severe hepatitis cases that are not caused by any of the five hepatitis virus strains (A-E). Since the first alert launched by the United Kingdom on 5 April 2022, cases of hepatitis of unknown aetiology in children have been reported from multiple countries worldwide. As of 26 May 2022, at least 38 children have required transplants, and nine deaths have been reported.

Most recently, some 700 cases of sudden and unexplained hepatitis in young children have come under investigation in 34 countries. The majority of these cases (449) are from the WHO European Region, with 262 cases from the United Kingdom alone. Of the 449 probable cases, 276 have information available on clinical outcome. Of these, 201 have recovered, while 74 remain under medical care. Overall, 313 of the 449 cases were tested for adenovirus by any specimen type and had a valid positive or negative result. Of these, 164 (52.4%) tested positive.

To date, there have been no cases reported in the African region. These cases of severe acute hepatitis are of particular concern as most 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.

Source: World Health Organization – News- World Hepatitis Summit 2022 urges action to eliminate viral hepatitis as unexplained hepatitis cases in children rise globally (https://www.who.int/news/item/07-06-2022-world-hepatitis-summit-2022-urges-action-to-eliminate-viral-hepatitis-as-unexplained-hepatitis-cases-in-children-rise-globally)

World Health Organization regional office for Europe – Joint ECDC – WHO Regional Office for Joint Hepatitis of Unknown Origin in Children Surveillance Bulletin (https://cdn.ecdc.europa.eu/novhep-surveillance/)

Crimean-Congo Hemorrhagic Fever - Iraq

Between 1 January and 22 May 2022, 212 cases of Crimean-Congo haemorrhagic fever (CCHF) have been reported to the WHO from the Iraqi health authorities, of which 169 (80%) were reported in April and May alone. Of the 212 cases, 97 were laboratory confirmed and 27 deaths occurred overall. Among confirmed cases, most had direct contact with animals, and were livestock breeders or butchers.

CCHF is a viral tick-borne disease that is transmitted to humans by bites of infected ticks, and by direct contact with blood or tissues from infected humans and livestock. CCHF is endemic in Africa, the Balkans, the Middle East and Asian countries. CCHF has been reported in Iraq since 1979.

CCHF virus causes a haemorrhagic fever – patients present with fever, rash, bleeding. The majority of patients recover, but up to 30% develop severe illness with multi-organ failure and have a fatal outcome.

BEYOND OUR BORDERS

Dengue - Sao Tome and Principe

On 13 May 2022, the Ministry of Health (MoH) of Sao Tome and Principe notified WHO of a dengue outbreak in Sao Tome and Principe. From 15 April to 17 May, 103 cases of dengue fever and no deaths have been reported. This is the first reported dengue outbreak in the country. This outbreak alert was initially triggered when a suspected dengue case was reported at a hospital in Sao Tome and Principe on 11 April. This case, who presented with symptoms suggestive of dengue infection, had a travel history and was later diagnosed as having a past dengue infection.

Dengue fever is a zoonotic and vectorborne disease that is transmitted by mosquito bites. The disease is not communicable human-to-human. Areas affected extend to most tropical and subtropical countries of Oceania, Asia, the Caribbean, the Americas and parts of Africa.

Symptoms typically include fever, headache, muscle and joint pains, fatigue, nausea and vomiting, skin rash, tendency to bleed and respiratory symptoms, and may last up to seven days. Patients with past dengue fever are prone to more severe disease.

Figure 7. 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: 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).

WHO AFRO UPDATE

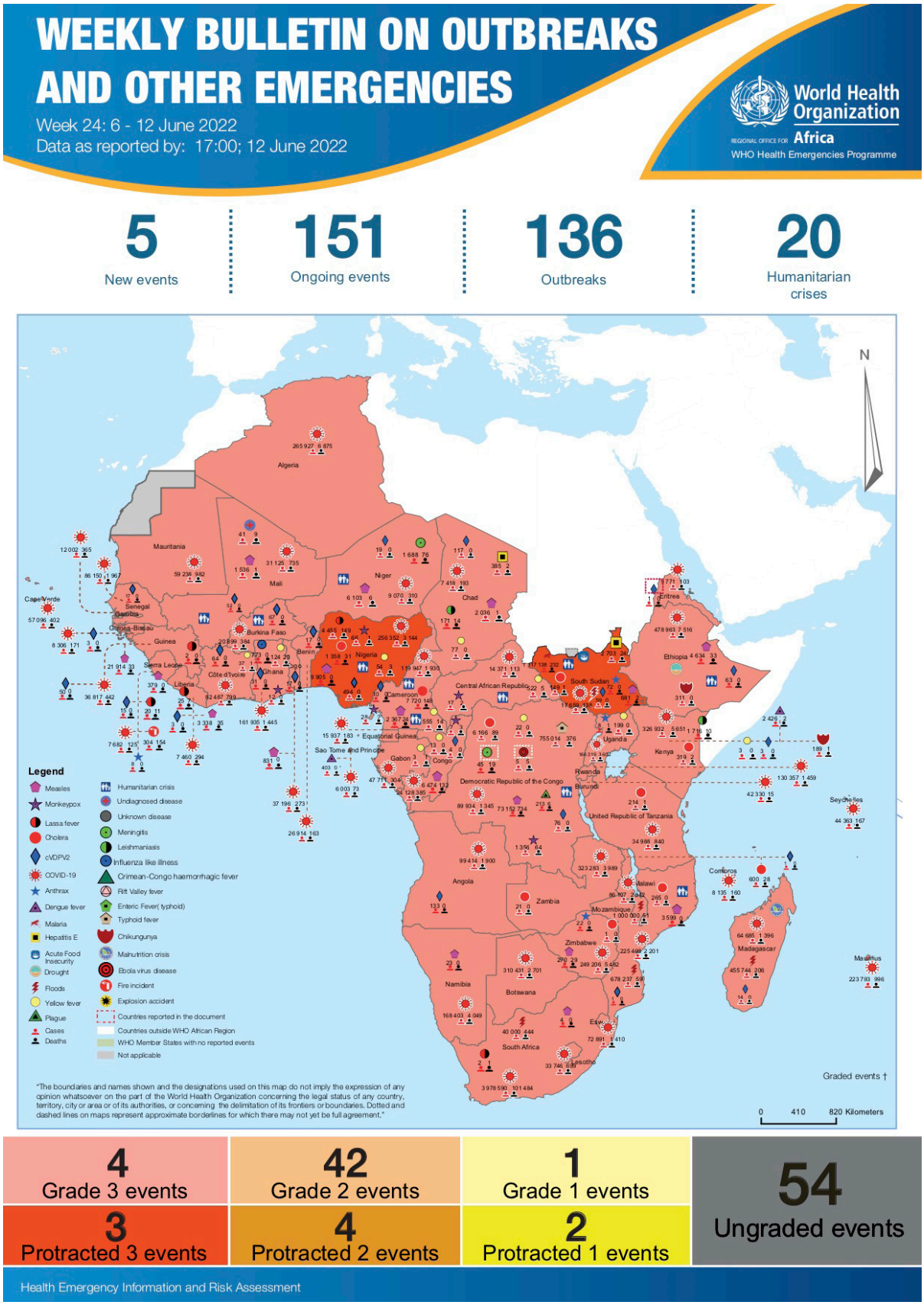

Figure 8. The Weekly WHO Outbreak and Emergencies Bulletin focuses on selected public health emergencies occurring in the WHO African Region. The African Region WHO Health Emergencies Programme is currently monitoring 140 events. For more information, see link below:
https://apps.who.int/iris/bitstream/handle/10665/352474/OEW11-0713032022.pdf