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## Editor's Note



Dr Michelle Groome

We entered into the second half of 2021 in the throes of yet another wave of COVID-19 infections and with adjusted Level 4 restrictions in place. For some provinces, like Gauteng, this third wave has been the worst one yet, partly driven by the highly-transmissible Delta variant. We are surrounded by accounts of friends, family members and colleagues who have become ill or even succumbed to the SARS-CoV-2 virus. The upscaling of the vaccination programme, amidst improved vaccine supply, provides some light at the end of this seemingly unending COVID-19 tunnel.

Rabies has once again raised its head in Gauteng. In June two cases of rabies were confirmed, with a further three cases suspected, in jackal from the Cradle of Humankind area, Mogale City Municipality. This month, rabies was confirmed in a honey badger in the same area. No human exposures to the jackal were reported; however, there were human exposures to the honey badger. We outline the correct procedures in the event of a human exposure. Preventative interventions are underway, including rabies vaccination campaigns in dogs and cats in the area and surrounds. Please ensure that your dogs and cats are fully vaccinated against rabies. Also remember that rabid wild animals often appear tame, so please refrain from feeding or petting wildlife.

We provide an update on surveillance for enteric fever, which remains a global public health concern especially among children in low- and middle-income countries. Enteric fever is a category one notifiable medical condition in South Africa. The Centre for Enteric Diseases reports on enteric fever cases from January 2019 to June 2021, including evaluation of antimicrobial susceptibility. Of particular concern is the increasing resistance to ciprofloxacin, which is currently recommended as the treatment of choice for uncomplicated enteric fever. Surveillance continues for other respiratory pathogens, including influenza and RSV, with the number of infections consistently lower than in the years prior to 2020.

The "Beyond Our Borders" section highlights an outbreak of vibriosis in the United States, leptospirosis reported in Guyana, on the northern Atlantic coast of South America, and botulism in the Ukraine.

We hope you enjoy reading this edition of the Communiqué.

## ZOONOTIC AND VECTOR-BORNE DISEASES

### An update on rabies in South Africa

A case of rabies was reported from the Amathole District, Eastern Cape Province in June 2021. On 24 May 2021, the 7-year-old boy was bitten in the face by a stray dog, in an unprovoked attack. On 26 June 2021, the child presented to a local hospital with unusual behaviour, confusion, hiccups, vomiting, and hypersalivation. The child demised on 29 June 2021. Samples collected for laboratory testing included saliva (ante-mortem sample) and cerebrospinal fluid and nuchal biopsy (post-mortem samples), as rabies disease was clinically diagnosed. Rabies virus infection was confirmed in the cerebrospinal fluid and skin samples by RT-PCR testing at the NICD. Case investigation determined that incomplete post-exposure prophylaxis (PEP) was administered as the child received rabies immunoglobulin (RIG) and only one of the four required anti-rabies vaccine doses.

According to the WHO and SA rabies prevention guidelines, all animal exposures must be assessed for potential rabies virus

exposure. Rabies PEP should be administered as recommended based on the category of exposure when rabies is considered a risk. Rabies PEP should not be delayed pending laboratory confirmation of rabies in the animal. More information on rabies and post-exposure-prophylaxis is available from the NICD website: [www.nicd.ac.za](http://www.nicd.ac.za)

A total of six cases of human rabies has been laboratory confirmed during 2021 to date for South Africa. The cases were reported from Limpopo (LPP=3), KwaZulu-Natal (KZN=2), and Eastern Cape (EC=1) provinces. A total of 14 laboratory-confirmed cases has been recorded from January 2020 to date, with eight cases reported from the eThekweni Metropolitan Municipality in KZN, five from Vhembe District in LPP and one in Amathole District in EC provinces (Figure 1). Children under the age of 11 years account for 13 of these cases, all of whom were exposed to dogs.



**Figure 1.** Laboratory-confirmed human rabies cases for South Africa during 2020- 2021 (20 July).

In June 2021 two cases of rabies have been confirmed, with a further three cases suspected, in jackal from the Cradle of Humankind area, Mogale City Municipality, Gauteng Province. No human exposures to the jackal were reported. This was followed by the confirmation of rabies in a honey badger in July 2021 in the same area. Human exposures to the rabid badger were reported. Since June, rabies vaccination campaigns in dogs and cats have been underway in the affected and surrounding areas. In 2016, an extensive outbreak of rabies in jackal, with spill-over to domestic dogs was reported in the same area.

The public is urged to ensure that their dogs and cats are fully vaccinated against rabies. Also, the public should refrain from engaging in direct interactions with wildlife. Often, rabid wildlife

may appear tame and it may be tempting to feed or pet such animals. If any animal is suspected to be rabid (including animals presenting with unusual behaviour, hyper-salivation, signs of paralysis), contact your local or state veterinarian ([Vet.help@gauteng.gov.za](mailto:Vet.help@gauteng.gov.za)) in order for the animal to be investigated. When possible exposures in humans do occur (for examples bites, scratches inflicted by a suspected rabid animal), rabies post-exposure prophylaxis should be sought immediately. Rabies post-exposure prophylaxis is considered a live-saving emergency intervention following possible rabies virus exposures. Rabies post-exposure prophylaxis entails thorough cleaning of the wound site/s followed by rabies vaccination and rabies immunoglobulin therapy. More details on rabies post-exposure prophylaxis are available from the NICD website.

**ENTERIC DISEASES**

**Surveillance of enteric fever, 2019-2021, South Africa**

Infection with *Salmonella* Typhi or *S. Paratyphi* A, B or C can result in the clinical syndrome of enteric fever. Enteric fever remains a global health concern, affecting millions of people annually and disproportionately impacting low-and middle-income countries where children bear the brunt of the disease. The emergence and dissemination of multidrug-resistant, fluoroquinolone-resistant and extensively drug-resistant strains of *S. Typhi* over the last two decades highlights the need for ongoing surveillance and antimicrobial stewardship. In addition, reports suggest that *S. Paratyphi* is responsible for an increasing proportion of enteric fever compared with *S. Typhi* in parts of Asia. In 2017, a Vi-tetanus toxoid typhoid conjugate vaccine was prequalified by the World Health Organization (WHO) and is recommended by the WHO for programmatic use from six months of age in typhoid endemic countries, prioritising countries with a high burden of typhoid fever or high rates of antimicrobial resistance.

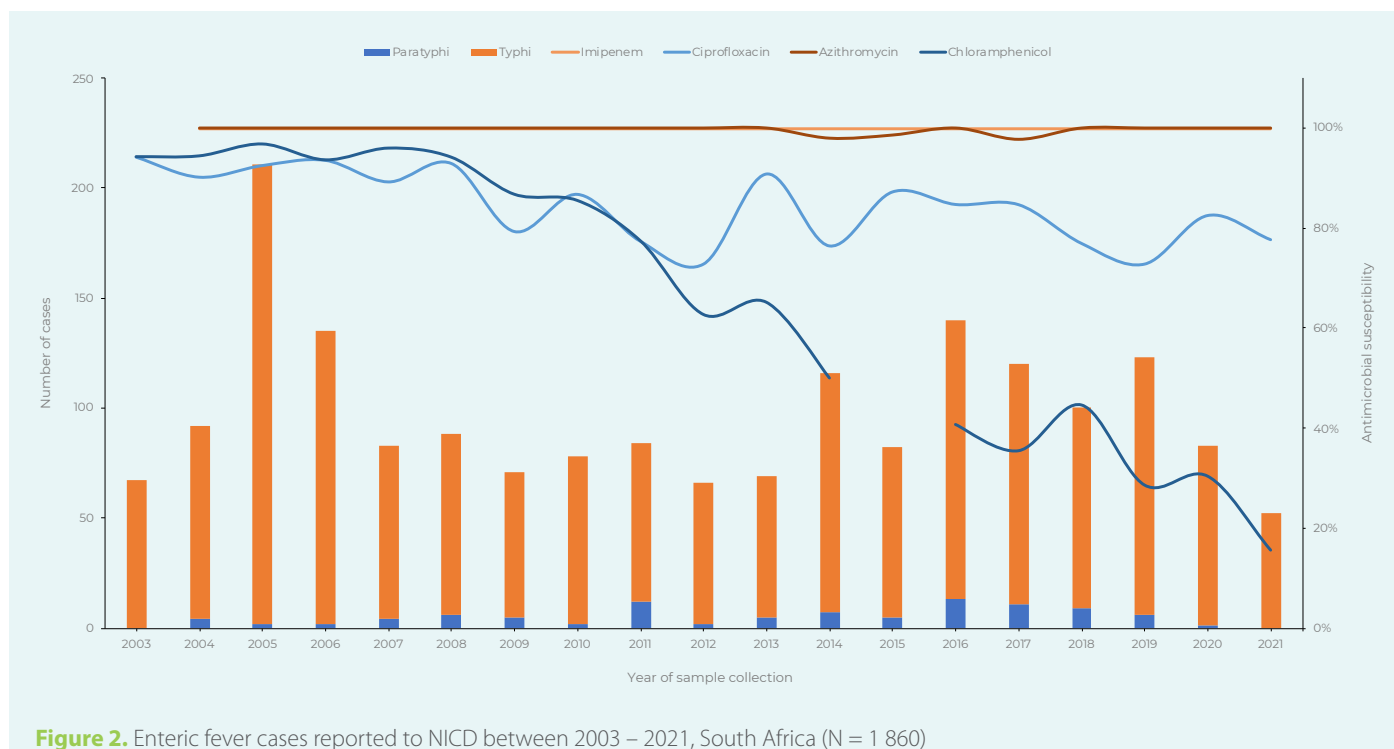
Enteric fever is endemic in South Africa. The last major outbreak occurred in 2005 in Delmas, Mpumalanga Province, when over 400 laboratory-confirmed cases were identified. From 2006 through 2020, an average of 90 cases per year has been reported nationally. The annual incidence rate for the same period is an average of 0.2 cases per 100 000 population. Cases are observed throughout the year without any notable seasonality. The majority of cases are typically reported from Gauteng Province followed by Western Cape and KwaZulu-Natal provinces. Enteric fever is a category one notifiable medical condition (NMC) in South Africa. *S. Typhi* isolates are routinely referred to the Centre for Enteric Diseases (CED), NICD, from both public and private

laboratories. At the CED, isolates undergo confirmatory testing and whole-genome sequencing (WGS); WGS supports the identification of clusters and outbreaks

This report focuses on data from January 2019 to June 2021.

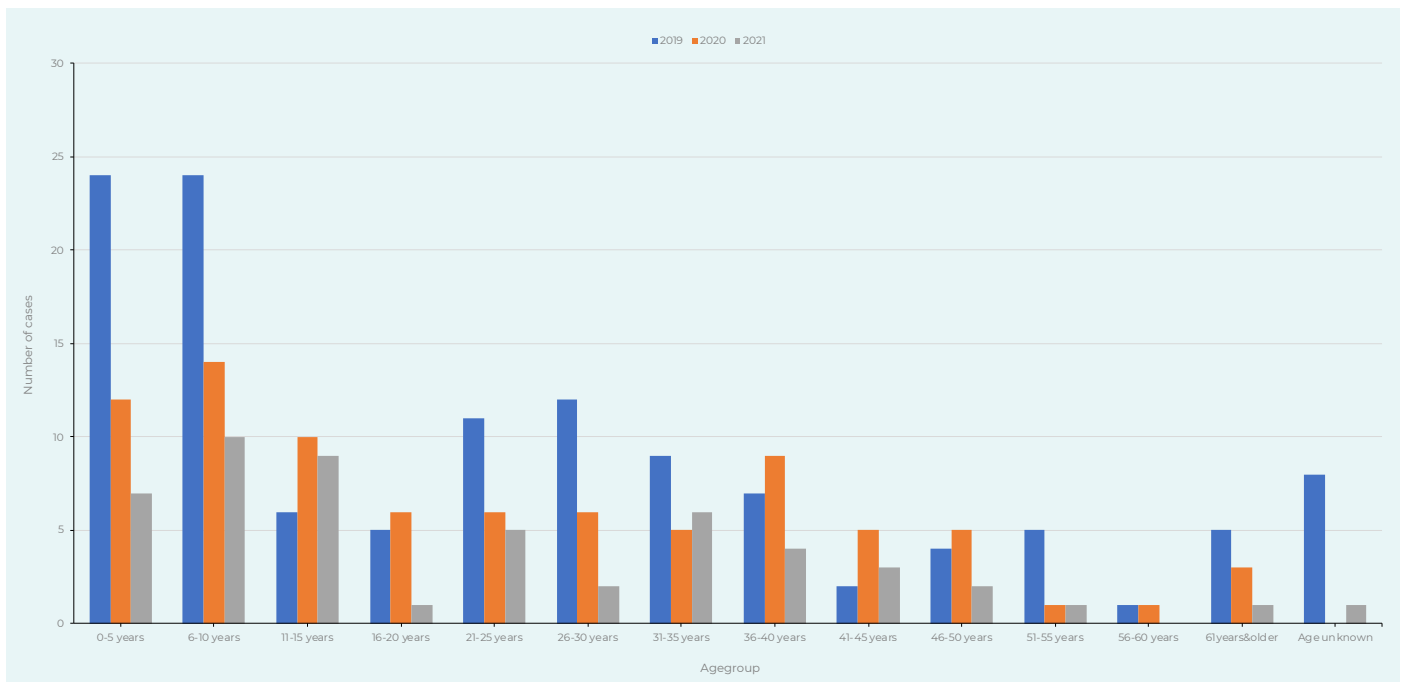
In 2019, a total of 123 cases was reported; this number decreased to 83 (33% decrease) in 2020. Fifty-two cases have been reported in the first half of 2021. *S. Typhi* accounted for 97% (251/258) of the total cases while *S. Paratyphi* accounted for 3% (7/258) (Figure 2). Isolates have been received for 87% (107/123) of the cases in 2019, 90% (75/83) of the cases in 2020 and 88% (46/52) of the cases in 2021. The age groups most commonly affected are children aged 6 to 10 years (19%, 48/258), followed by <5 years (17%, 43/258) and 11 to 15 years (10%, 25/258) (Figure 3). Gauteng Province accounted for 36% (94/258) of the cases followed by Western Cape (33%, 85/258) and KwaZulu-Natal provinces (10%, 27/258) (Figure 4).

Reference laboratory antimicrobial susceptibility testing includes ciprofloxacin, azithromycin, chloramphenicol and imipenem. Data from 2003 to date show a steady decrease in susceptibility to chloramphenicol, a former first-line antibiotic for treating typhoid fever, from 97% in 2005 to 16% in 2021. Susceptibility to ciprofloxacin decreased from over 90% in 2003 to just below 80% in 2021. All isolates tested to date have been susceptible to imipenem, and susceptibility to azithromycin is consistently above 98% (Figure 2). The trend of increasing resistance to ciprofloxacin, which is currently recommended as the treatment of choice for uncomplicated enteric fever, is definitely concerning and requires close monitoring.

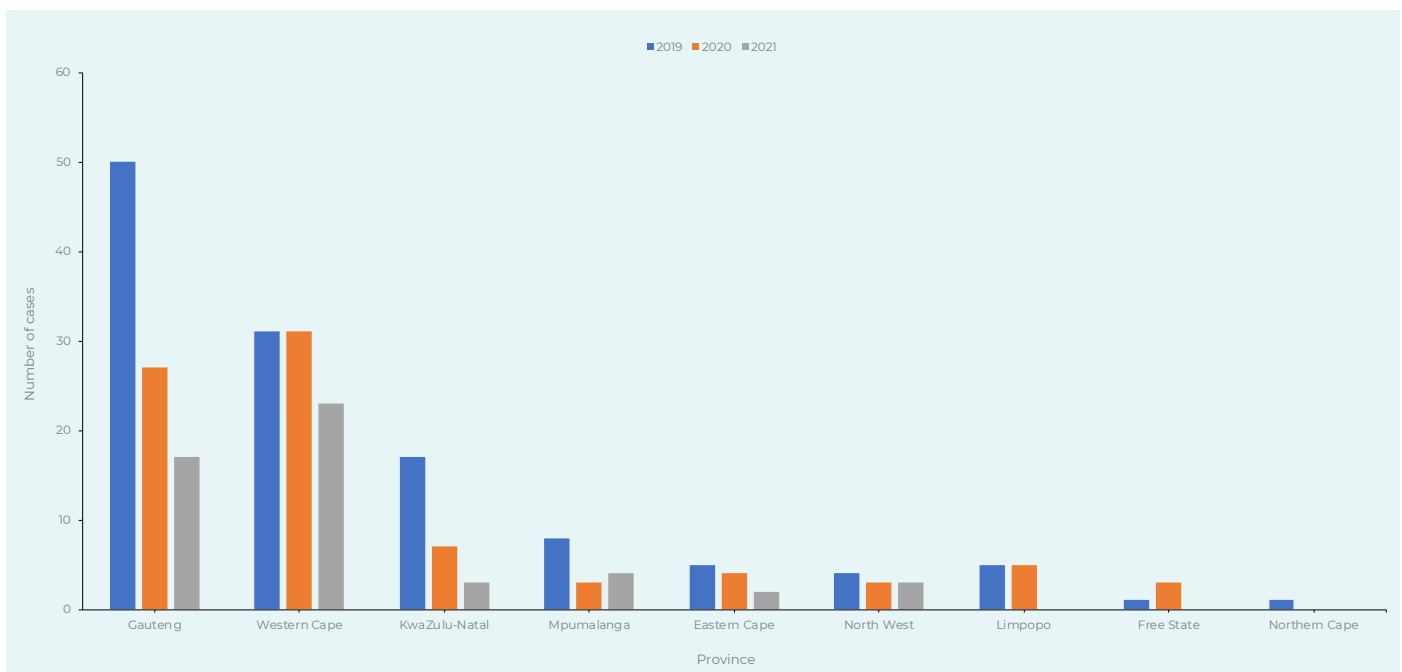


**Figure 2.** Enteric fever cases reported to NICD between 2003 – 2021, South Africa (N = 1 860)

**ENTERIC DISEASES**



**Figure 3.** Enteric fever cases by age group, 2019 – 2021, South Africa (N = 258)



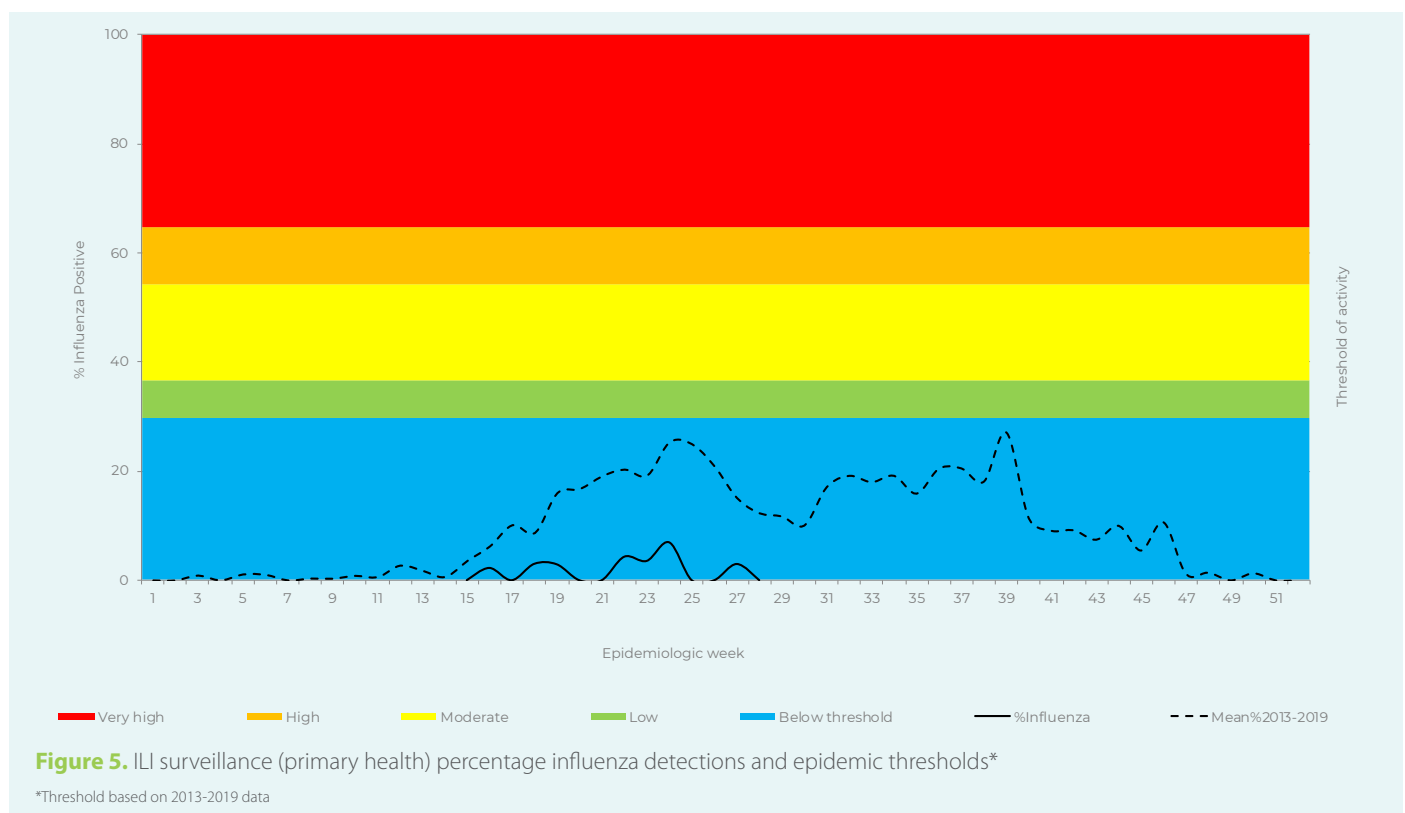
**Figure 4.** Enteric fever cases by province, 2019 – 2021, South Africa (N = 258)

**SEASONAL DISEASES**

**Influenza, 2021**

Since the first week of March 2021, when the first case of influenza was detected in surveillance, a total of 54 influenza cases has been detected from surveillance sites. The majority of cases (53/54, 98%), were influenza B, of which 43 (81%) were influenza B/Victoria. In 2021 to date, there has been one case of influenza A (H3N2) detected. Patients positive for influenza were from the Eastern Cape, KwaZulu-Natal, North West, Gauteng, Mpumalanga and the Western Cape provinces. Influenza transmission has remained below seasonal threshold [using the Moving Epidemic Method (MEM), a sequential analysis using the R Language, to calculate the duration, start and end

of the annual epidemic] (Figure 5). 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 medical conditions, for example conditions affecting the heart or lung, diabetics or persons with a weakened immune system. Recommendations on target groups, dosages and contraindications for the 2021 influenza vaccine, and influenza antiviral treatment are available in the Influenza NICD recommendations, 2021

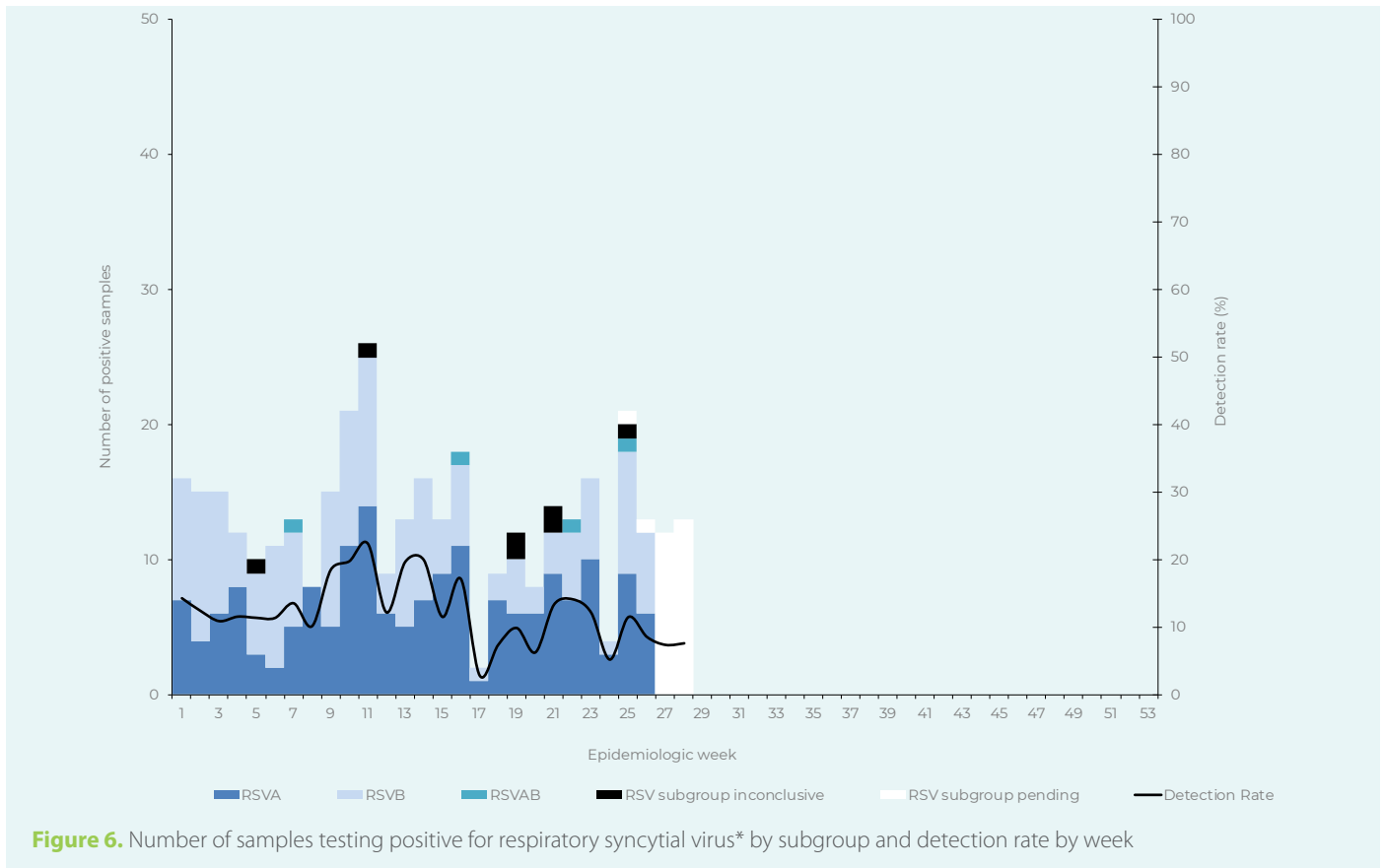


**SEASONAL DISEASES**

## Respiratory syncytial virus (RSV), 2021

In 2021 to date, RSV has been circulating since the first week of the year. Of the 3 101 cases hospitalised for severe respiratory illness who were tested for RSV at sentinel sites, 368 (12%) tested positive. The majority of RSV positive cases were subgroup A

(48%, 175/368). The highest detection rate was reported in week 12, 22% (26/116) and the detection rate has been decreasing in the past few weeks (Figure 6).



**Figure 6.** Number of samples testing positive for respiratory syncytial virus\* by subgroup and detection rate by week

## 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 7 on page 8.

### Vibriosis – USA

The Washington State Department of health has reported an outbreak of vibriosis in the United States of America with 52 cases reported for the month of July. This is an unusually high number of cases when compared to the five cases reported in July 2020.

Vibriosis is a disease caused by Gram-negative bacteria, naturally found in warm, salty marine environments, associated with eating raw or uncooked shellfish. There are more than 20 *Vibrio* species that can cause human illness. The primary clinical manifestation of infection of vibriosis is gastroenteritis; however patients can also experience wound infections and septicaemia,

seen particularly in immunocompromised patients. Once ingested, *Vibrio* bacteria can cause watery diarrhoea, abdominal cramps, nausea, vomiting, fever, and chills. These symptoms may occur from 4 to 24 hours post-infection and can last for up to three days.

Treatment for vibriosis is often not necessary in mild cases and supportive symptom management is adequate. Patients should keep well hydrated during the illness by drinking plenty of fluids. There is no evidence that antibiotics have an effect on the severity or duration of illness, and they are therefore not recommended.

### Leptospirosis – Guyana

There have been five cases of leptospirosis reported in East Berbice-Corentyne, Guyana, following major flooding in the country. Guyana is a country with a population of almost 750 000, on the northern Atlantic coast of South America.

Leptospirosis is a zoonotic infection caused by pathogenic long, thin, motile spirochetes of the genus *Leptospira*. Leptospirosis is considered the most common zoonosis in the world and is mainly found in warm climates and settings associated with poor sanitation and agricultural occupations involving contact with animals or water. Once in water or soil, these bacteria can survive for weeks to months. Outbreaks of leptospirosis frequently follow heavy rainfall, flooding with fresh water, and increasing rodent numbers. Human infection occurs when there is direct contact of abraded skin or mucous membranes with the urine of infected animals or with contaminated water or soil.

The diagnosis of leptospirosis is usually made by serology. The incubation period for leptospirosis is 2 days to 4 weeks and illness usually begins with fever, headache, generalised muscle aches and gastroenteritis symptoms. The illness may occur in two phases. The first phase is characterised by the symptoms mentioned above, after which the patient may recover for a short period of time. If a second phase occurs, it is characterised by a more severe course of illness where patients may develop kidney or liver failure as well as meningitis. The infection may last from a few days up to three weeks or more.

Leptospirosis is treated with antibiotics which should be taken early in the course of the illness. In patients with severe disease, intravenous antibiotics may be indicated.

## BEYOND OUR BORDERS

## Botulism – Ukraine

A case of botulism food poisoning was reported in Melitopol, Zaporizhzhia Oblast of south-eastern Ukraine. A 65-year-old male became symptomatic after he bought and consumed a cold-smoked mackerel in a retail chain, and was later diagnosed with botulism at the central regional hospital in Melitopol.

Botulism is a rare but serious illness caused by a neurotoxin that interferes with motor nerve function, resulting in difficulty breathing, muscle paralysis, and even death. The neurotoxin is produced by *Clostridium botulinum*, a Gram-positive, rod-shaped, anaerobic, spore-forming, motile bacterium found in soil, dust and river or sea sediments. Foodborne botulism occurs following the consumption of food contaminated with preformed botulinum toxin, the incubation of which is generally 18 to 36 hours. Wound botulism and infant botulism are other forms of the disease.

Clinical features of botulism include weakness of the facial muscles that may then spread to the neck, arms, torso, and lower limbs. If untreated, the disease may progress and symptoms may worsen causing full paralysis of some muscles, including respiratory muscles, which can lead to death.

Botulism requires in-hospital treatment with a neutralising antitoxin. Treatment will not reverse any paralysis that has already occurred but may arrest its progression. Patients with respiratory muscle paralysis may require mechanical ventilation for support. In most people, paralysis that occurred before treatment will gradually improve over the following weeks or months.



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



**WHO AFRO UPDATE**

# WEEKLY BULLETIN ON OUTBREAKS AND OTHER EMERGENCIES

Week 29: 12 - 18 July 2021  
Data as reported by: 17:00; 18 July 2021

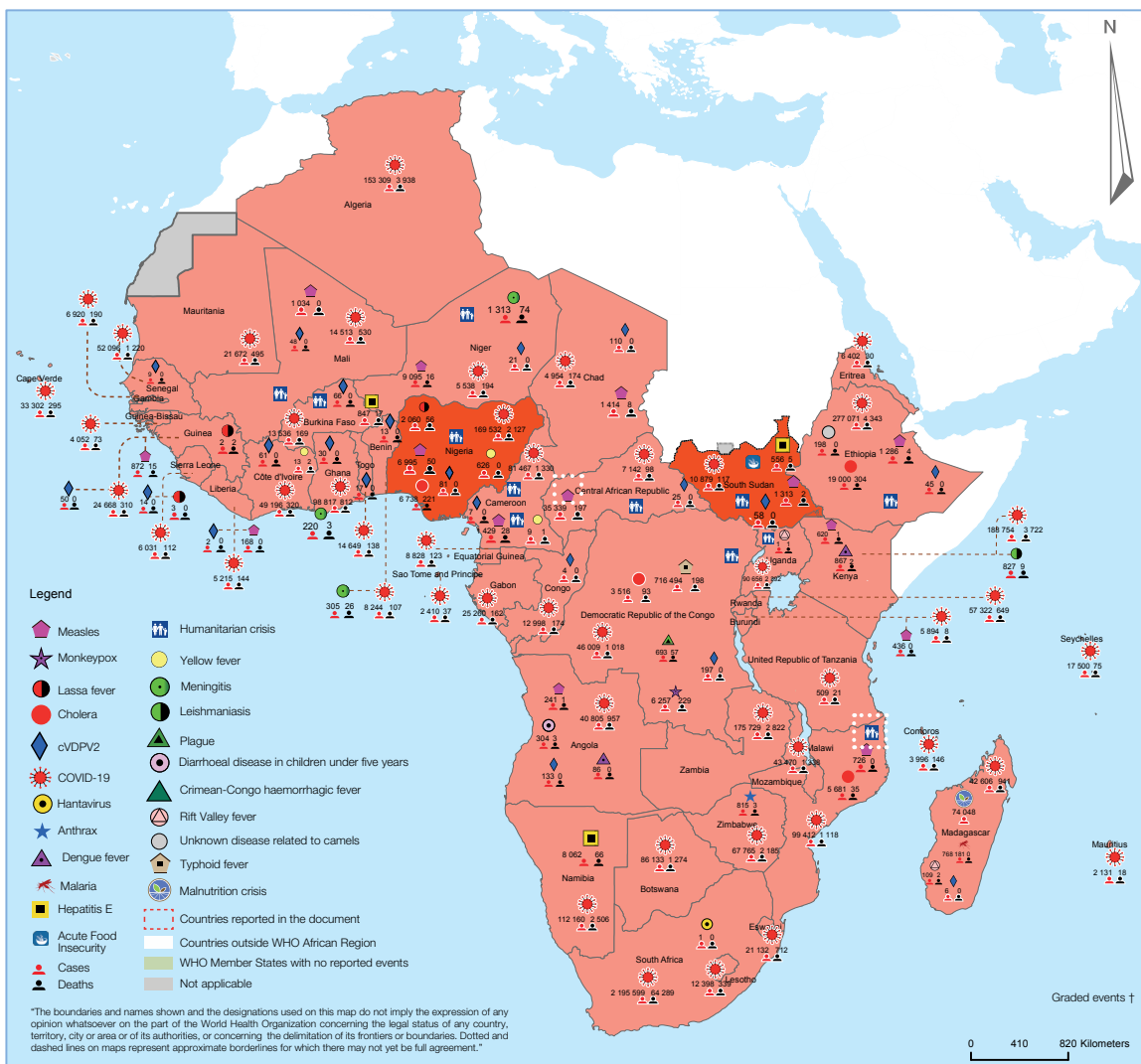


**2** New events

**118** Ongoing events

**107** Outbreaks

**13** Humanitarian crises



<b>49</b> Grade 3 events	<b>25</b> Grade 2 events	<b>0</b> Grade 1 events	<b>37</b> Ungraded events
<b>3</b> Protracted 3 events	<b>3</b> Protracted 2 events	<b>3</b> Protracted 1 events	

Health Emergency Information and Risk Assessment

**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 120 events. For more information see link below:  
<https://apps.who.int/iris/bitstream/handle/10665/343057/OEW29-1218072021.pdf>

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**COMMUNICABLE DISEASES****COMMUNIQUÉ**