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EDITORIAL

In this edition of the NICD Communiqué, we provide an update on rabies in South Africa and describe a probable case of rabies in a four-year-old from the Eastern Cape Province. We issue an alert on two different strengths of equine rabies immunoglobulin (ERIG) which will be available for use in the country. Healthcare workers are advised to check the package insert of all ERIG products to ensure that the right dosage and volume is administered.

A case of trypanosomiasis was treated in Johannesburg in a USA citizen who has been resident in Malawi for the past 14 years.

We report on a foodborne disease outbreak at a school in eThekweni District in KwaZulu-Natal Province; a suspected hepatitis A outbreak at an old age home in Johannesburg, Gauteng Province; and a cluster of mumps cases at a school in North West Province.

Regarding seasonal disease, the Centre for Respiratory Disease and Meningitis reports back on the 2019 influenza season, and gives an update on the meningococcal disease surveillance from January 2019 to date. Influenza transmission is currently high, and influenza vaccination, which provides protection against circulating strains of influenza each season, remains the most effective measure to prevent illness and possibly fatal outcomes.

The Ebola outbreak continues in the Democratic Republic of the Congo (DRC). The Ministry of Health of Uganda has declared the 6th outbreak of Ebola virus disease (EVD) after three cases were confirmed in the country. All three were family members with a recent travel to the DRC. This cluster of EVD cases in Uganda highlights the importance of preparedness of countries.

As usual, we include the WHO-AFRO infographic on public health and humanitarian events in the AFRO region.

2 ENTERIC DISEASES

a Foodborne disease outbreak at a school in eThekweni District, KwaZulu-Natal Province

On 26 May 2019, the KwaZulu-Natal Provincial Communicable Disease Control (CDC) notified the eThekweni District CDC of a suspected foodborne disease outbreak at a school. Initially, 35 learners reported gastrointestinal symptoms to the school health official. The number of cases increased to 78 by 27 May 2019. Affected learners presented at St Mary's Hospital (n=73) and RK Khan Hospital (n=5) with symptoms of nausea, vomiting, abdominal cramps and diarrhoea. The symptoms were reported by learners who ate breakfast from the school kitchen.

The district outbreak investigation team interviewed cases using a standardised foodborne disease outbreak case investigation form. Stool specimens were collected from case-patients where possible. Environmental health practitioners collected food samples from the school kitchen and tuckshop, as well as water samples. Samples were sent to the NHLS Infection Control Service Laboratory (ICSL) for testing.

The median age of affected learners was 15 years (range 12-18 years). They presented with abdominal cramps (70%), vomiting (32%) and diarrhoea (24%). All affected learners were treated as

outpatients; however, two did not respond to the treatment and were taken back to the hospital for review, and one was admitted for dehydration. Only 17% (n=13) of the patients were available for interviews. Fifteen stool specimens were collected; however, on examination, all stools were formed (not loose or watery) and no pathogens were isolated.

The stool specimen testing was limited in that only routine bacteriological testing was conducted, which does not include testing for the common toxin-producing bacterial pathogens of importance in foodborne disease (including *Bacillus cereus*, *Staphylococcus aureus* and *Clostridium perfringens*). Given the clinical presentation and estimated incubation period (5-6 hours), the causative pathogen was most likely a toxin-producing bacteria (*B. cereus*, *S. aureus* or *C. perfringens*). Outbreaks linked to these pathogens are typically associated with poor food handling and storage.

Source: Provincial Epidemiology Team, Division of Public Health Surveillance and Response and Centre for Enteric Diseases, NICD-NHLS; KwaZulu-Natal Department of Health; junot@nicd.ac.za

b Suspected hepatitis A outbreak at an old age home in Johannesburg, Gauteng Province, April 2019

On 16 April 2019, the National Institute for Communicable Diseases (NICD) was informed of two laboratory-confirmed hepatitis A virus (HAV) cases at an old age home in Johannesburg, Gauteng Province. The first case, a 79-year-old female, developed fulminant HAV infection on 11 April, was hospitalised on 12 April and subsequently demised on 13 April 2019. The second case, a 69-year-old female, developed symptoms on 14 April, was hospitalised on 15 April and later recovered, and was discharged on 23 April 2019 (Figure 2).

An investigation was conducted to determine the extent of the outbreak and possible sources of infection in order to prevent further spread. HAV serological survey was carried out on close contacts of the two confirmed cases. A close contact was defined as any person who shared the same living space, visited, cared or prepared food for the confirmed cases in the past month. Blood samples were collected from 160 participants for IgM (new/current infection) and IgG (immunity) antibodies. A standardised questionnaire was administered to participants. A walkthrough observational assessment was done at the facility.

Laboratory results showed that 14% (23/160) of the contacts were IgG negative (non-immune) and 85% (137/160) were IgG positive. Two residents

(1.3%) were IgM low positive and the rest, IgM negative. No specific transmission or exposure risk factors were identified. There was no dedicated infection prevention and control (IPC) focal person in the facility. Handwashing/hand sanitation dispensers were not visible in the wards.

Hepatitis A is a communicable, vaccine preventable disease caused by hepatitis A virus (HAV). It can cause mild to severe, but rarely fatal, liver disease. HAV transmission is by consumption of contaminated food or water and by person-to-person through faecal-oral route. Although the sources of HAV infection/exposure were not identified, deficiencies in IPC measures were identified. Immunoglobulin post-exposure prophylaxis was recommended to high-risk contacts aged ≥60-years. HAV vaccine was recommended to low-risk contacts aged <50-years. HAV vaccine is not routinely recommended for individuals older than 60 years. Strengthening and adherence to IPC practices were recommended to prevent horizontal spread.

Source: Division of Public Health Surveillance and Response, South African Field Epidemiology Training Programme and Centre for Vaccines and Immunology, NICD-NHLS; Johannesburg Old age home. outbreak@nicd.ac.za

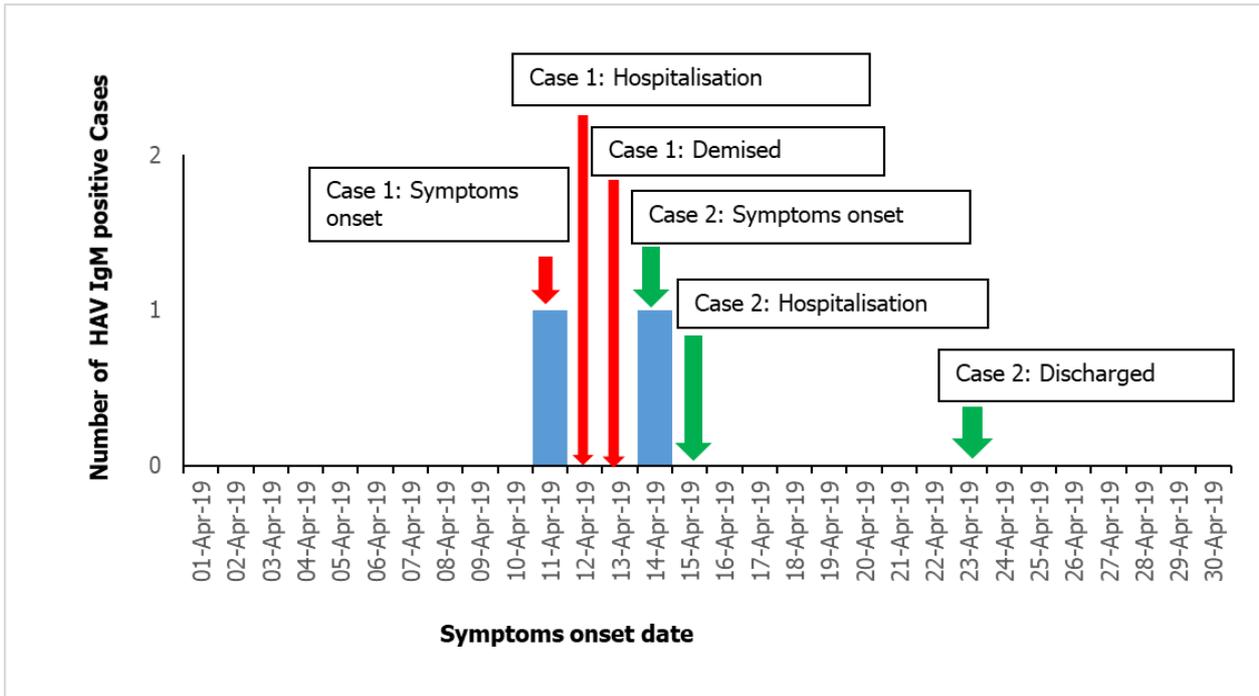


Figure 2. Epidemic curve of HAV IgM positive cases in an old age home, illustrating events timelines, April 2019.

3 VACCINE-PREVENTABLE DISEASES

a A cluster of mumps cases at a school in North West Province

On 22 May 2019, the NICD was notified of a suspected mumps outbreak at a primary school in Zeerust, Ramotshere Moiloa Sub-district, North West Province. A total of 130 suspected cases was reported by the school health nurse. Symptoms included swollen necks, headaches and fever. An investigation was conducted to determine the extent of the outbreak and to make recommendations to prevent further spread. Blood samples were collected from suspected cases and tested for mumps antibodies (IgM – new/current infection, and IgG – immunity) at the National Health Laboratory Service (NHLS) immunology reference laboratory in Braamfontein, Johannesburg.

The median age of suspected cases was 9 years (IQR 8-10 years), 52% (67/130) were males. Laboratory results showed that 49% (64/130) were IgM positive, 43% (56/130) were IgG positive and 8% (10/130) were IgG negative (non-immune).

A second neighbouring school later reported suspected cases of mumps. Results of blood samples taken from this school are still pending. Contact tracing and health education was conducted at crèches, health facilities and surrounding communities.

Mumps is caused by the mumps virus. It spreads from person to person via saliva or respiratory

droplets. It may also be spread indirectly via contaminated items or surfaces. Infected persons present with fever, headache, muscle weakness, stiff neck, loss of appetite, swelling and tenderness of one or more of the salivary glands, including the parotid gland. There is no treatment for mumps. It can be prevented through vaccination with the measles, mumps and rubella (MMR) combination vaccine. This vaccine is not part of the Expanded Program of Immunisation (EPI) for South Africa. It is only available in the private sector.

On 20 June 2019, a community imbizo was held at a village in the affected area to update and educate the parents, school teachers, learners and the community. Good hygiene practices, such as hand washing and cough/sneeze etiquette in order to prevent further transmission, were emphasised. To date, no further cases have been reported from either school.

Source: Provincial Epidemiology Team, Division of Public Health Surveillance and Response, NICD-NHLS; North West Department of Health; outbreak@nicd.ac.za

4 INTERNATIONAL OUTBREAKS OF IMPORTANCE

a Ebola virus disease outbreak, Democratic Republic of Congo and Uganda

The Ministry of Health of Uganda declared the 6th Ebola virus disease (EVD) outbreak on 11 June 2019, in the district of Kasese in south-western Uganda. The first case was a five-year-old child who had recently travelled to the Democratic Republic of Congo (DRC) for burial of the grandfather who succumbed to EVD. The child tested positive for Ebola virus by PCR and died on 11 June 2019. Two other members of the same family also tested positive for Ebola and died. As of 21 June 2019, there have been no new confirmed EVD cases in Uganda. About 108 contacts of the Ebola cases are being followed up, and 1 063 individuals have been vaccinated against EVD.

Public health responses from Uganda included vaccination of healthcare workers (HCWs), setting up of Ebola Treatment Units in the districts bordering North Kivu and Ituri, community education, psychosocial support and surveillance systems. WHO advises against any restriction of travel and trade to Uganda based on the currently available information. WHO continues to monitor travel and trade measures in relation to this event.

The EVD outbreak in DRC is ongoing. The number of EVD cases in Katwa and Butembo has decreased in recent weeks; however, concerns remain over the concurrent increase in the number of new cases occurring in areas that previously had lower rates of transmission, such as the Komanda, Lubero, and Rwampara health zones. There has also been an increase in healthcare worker cases and potential nosocomial infections. This highlights the ongoing need for protection of HCWs and patients in health facilities. As of 23 June 2019, there have been 2 247 cases (2 153 confirmed and 94 probable) including 1 510 deaths (1 416 among confirmed) making the overall case fatality of 67%. Of the 2 247 confirmed and probable cases with known age and sex, 57% (1 273) were female, and 29% (654) were children aged <18 years. The number of infected HCWs is 126 (6% of total cases).

In the 21 days between 3-23 June 2019, 63 health areas within 16 health zones reported new cases, representing 10% of the 664 health areas within North Kivu and Ituri provinces. During this period, a total of 239 confirmed cases was reported, the majority of which were from the health zones of Mabalako (35%; n=84), Beni (15%; n=35), Mandima (14%; n=33), Katwa (7%; n=16), and Kalunguta (6%; n=14).

As of 23 June 2019, 135 900 contacts have been registered, and 16 708 are currently under surveillance. Follow-up rates remained very high (88% overall) in health zones with continued operations. As of 22 June 2019, 140 794 people at risk have consented to and received the Ebola vaccine. Of

those, 37 373 are contacts and 67 756 contacts-of-contacts. The vaccinated people at risk included 31 016 HCWs and frontline workers (FLWs), and 34 522 children 1-17 years of age.

Current risk assessment and public health response

A meeting of the Emergency Committee was convened by the WHO Director-General under the International Health Regulation (IHR) on 14 June 2019. The committee expressed its concerns about the ongoing outbreak despite positive epidemiological trends especially in Butembo and Katwa. There are still challenges of acceptability by the community, strained human resources and inadequate funding. The recent cluster of EVD cases in Uganda is not unexpected but this emphasises the importance of preparedness of countries. It was the view of the committee that the outbreak is a health emergency in the Democratic Republic of the Congo and the region, but does not meet all the criteria for a Public Health Emergency of International Concern (PHEIC). The committee provided public health advice, which it strongly urged countries and responding partners to heed.

The Ministry of Health of the DRC continues to strengthen response measures, with support from WHO and partners. Surveillance activities continue, including case investigations, active case finding in health facilities and communities, and identification and listing of contacts around the latest confirmed cases. Laboratory capacity, infection prevention and control, clinical management of patients, vaccination, risk communication and community engagement, psychosocial support, safe and dignified burials, cross-border surveillance, and preparedness activities in neighbouring provinces and countries remain priorities.

In the light of the spread to neighbouring Uganda, contact-tracing efforts must be re-doubled, along with continuing engagement with communities on the importance of early reporting of signs and symptoms of the disease, and early attendance at healthcare facilities.

Situation in South Africa

As at 23 June 2019, there have been no EVD cases in South Africa associated with the current outbreak in the DRC. In addition, there are no suspected cases of EVD in South Africa at present.

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

5 SEASONAL DISEASES

a Influenza

The 2019 influenza season which started in week 16 (week ending 21 April) when influenza detections in the Viral Watch programme rose above the seasonal threshold, as determined by the Moving Epidemic Method, continues. Influenza transmission and impact are currently high.

Eleven influenza detections were made from 61 specimens (18%) in the first three months of the year, mainly from travellers.

Since April, influenza A has been detected in 547/760 (72%) specimens received from Viral Watch sites. The majority (515; 94%) has been further identified as influenza A(H3N2). In addition, 20 (4%) have been identified as A(H1N1)pdm09, and in 12, subtyping was inconclusive due to low viral load.

Influenza is a preventable infectious disease. Influenza vaccine is available at public health facilities and private pharmacies. Public health facilities pri-

oritise individuals at risk for developing severe influenza illness or complications. Individuals at risk of severe influenza disease include, among others, pregnant women, and those vulnerable due to pre-existing illnesses or risk factors (diabetes, chronic lung conditions, immunosuppression). Detailed recommendations on target groups, dosages and contraindications for influenza vaccine can be accessed at <http://www.nicd.ac.za/wp-content/uploads/2019/06/Influenza-guidelines-rev-6-June-2019clean.pdf>

Additional information on influenza, including alerts and frequently asked questions is available at www.nicd.ac.za

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

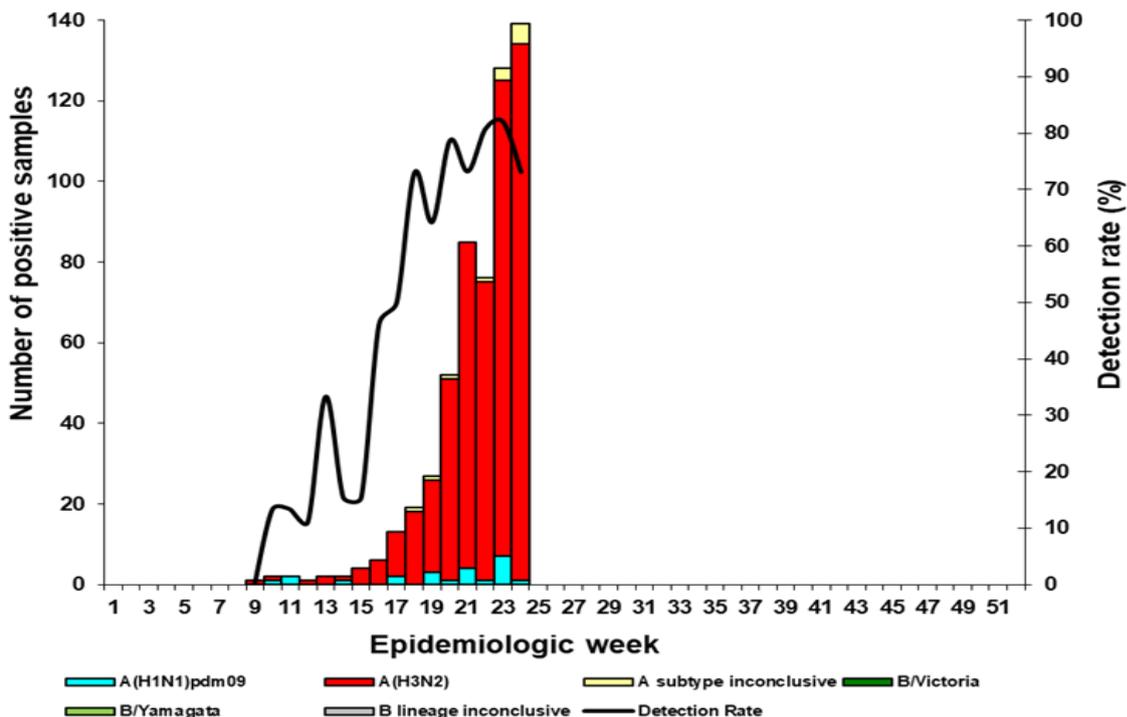


Figure 3. Viral Watch 2019: Number of positive samples by influenza types and subtypes and detection rate*

* Only reported for weeks with >10 specimens submitted.

Patients known to have acquired influenza abroad or from contact with travellers are not included in the epidemiological curve.
Inconclusive: insufficient viral load in sample and unable to characterise further

b Invasive Meningococcal Disease Surveillance Update: January to June 2019

Although meningococcal disease occurs year round, winter indicates the beginning of the meningococcal season. Clinicians should be vigilant when patients present with symptoms suggestive of meningitis or bacteraemia, and not delay in providing appropriate antibiotic treatment targeting meningococcal disease. All clinically suspected cases of meningococcal disease should be notified immediately to the provincial Communicable Disease Control Coordinators to ensure appropriate contact tracing, responsible prescribing of chemoprophylaxis and case counting. This can be done telephonically or through the NMC electronic app.

Up until week 20 (ending 1 June 2019), 36 cases of laboratory-confirmed invasive meningococcal disease (IMD) had been reported through the GERMS-SA surveillance network. This is slightly less than the 39 IMD cases reported in 2018 for the same time period. Most 2019 cases were from Western Cape (n=12), followed by Gauteng (n=9), Eastern Cape (n=4), and KwaZulu-Natal (n=8) provinces.

Mpumalanga, Limpopo and Free State provinces reported one case each. Thirty-one percent (11/35) of IMD cases with known age were <5 years old. Fifty-five percent (20/36) of patients had *Neisseria meningitidis* (NM) cultured from cerebrospinal fluid, whilst the remainder were from blood cultures. Of the 23 NM isolates serogrouped, serogroup B was the most predominant (n=11), followed by W (n=5), Y (n=5) and C (n=2). These serogroups occurred across all age categories (Figure 4).

As part of ongoing surveillance, Centre for Respiratory Diseases and Meningitis (CRDM) at the NICD offers meningococcal isolate confirmation/serogrouping, and NM detection by PCR of culture-negative/autopsy cases, free of charge.

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

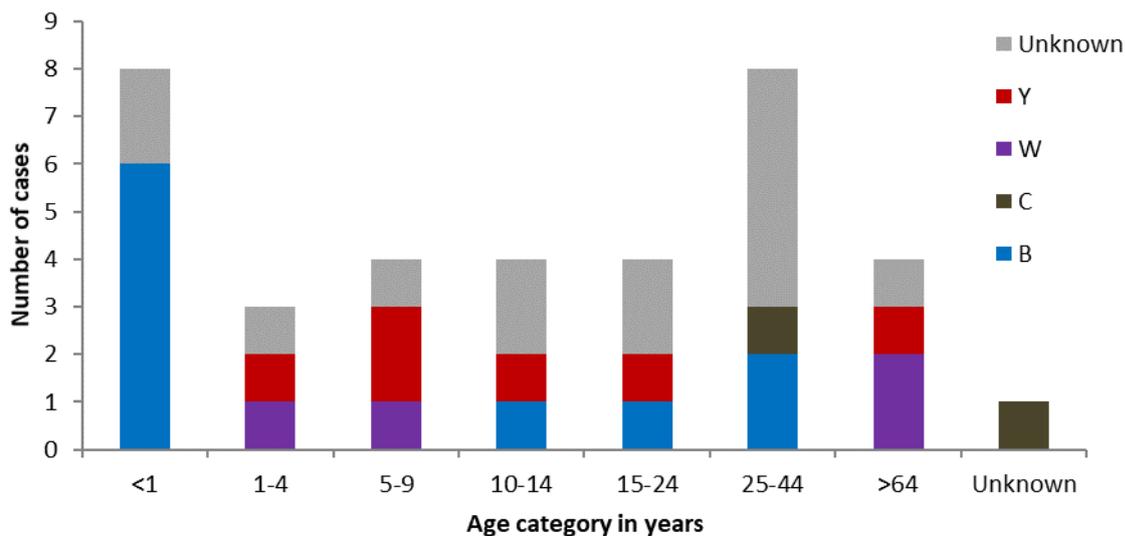


Figure 4. Invasive meningococcal disease in South Africa by age category and serogroup reported to GERMS-SA surveillance programme, 1 January 2019 – 1 June 2019, n=36

c Summary findings of the suspected enterovirus meningitis outbreak in Western and Eastern Cape provinces

At the end of May 2019, a total of 3 213 cerebrospinal fluid samples was tested from suspected cases of aseptic meningitis from the Western and Eastern Cape provinces. Six-hundred and eighteen (19%) cases were laboratory confirmed as enterovirus (EV) associated aseptic meningitis. The number of cases has declined significantly, in line with seasonal trends. The December peak in the Eastern Cape Province, accompanied by a decline in the Western Cape Province (during the holiday season)

provides an opportunity to speculate on the role of host migration patterns as a contributor towards the geographical spread of viral infections (Figure 5). Viral factors facilitating spread of EV infections have been well described. Shedding in asymptomatic patients that constitute the majority of EV cases, close contact and poor hygiene are additional factors. Climactic factors are postulated to contribute towards the seasonal distribution. The sub-

sequent Western Cape Province increase in January, co-incided with the end of the holiday season.

virus A71, enterovirus 74 and echovirus 6 were detected at 0.8% respectively.

Echovirus 4 was the predominant serotype in 80% (102/128) of samples successfully sequenced. The following serotypes were also detected - echovirus 9 (7%), and coxsackievirus A13 (3%). Echovirus 7, echovirus 18 and echovirus 30 were detected at 1.6% respectively. Coxsackievirus B3, coxsackievirus B5, echovirus 32, echovirus 33, entero-

Source: Tygerberg and Groote Schuur Hospital NHLS Virology laboratories; Nokwazi.Nkosi@nhls.ac.za

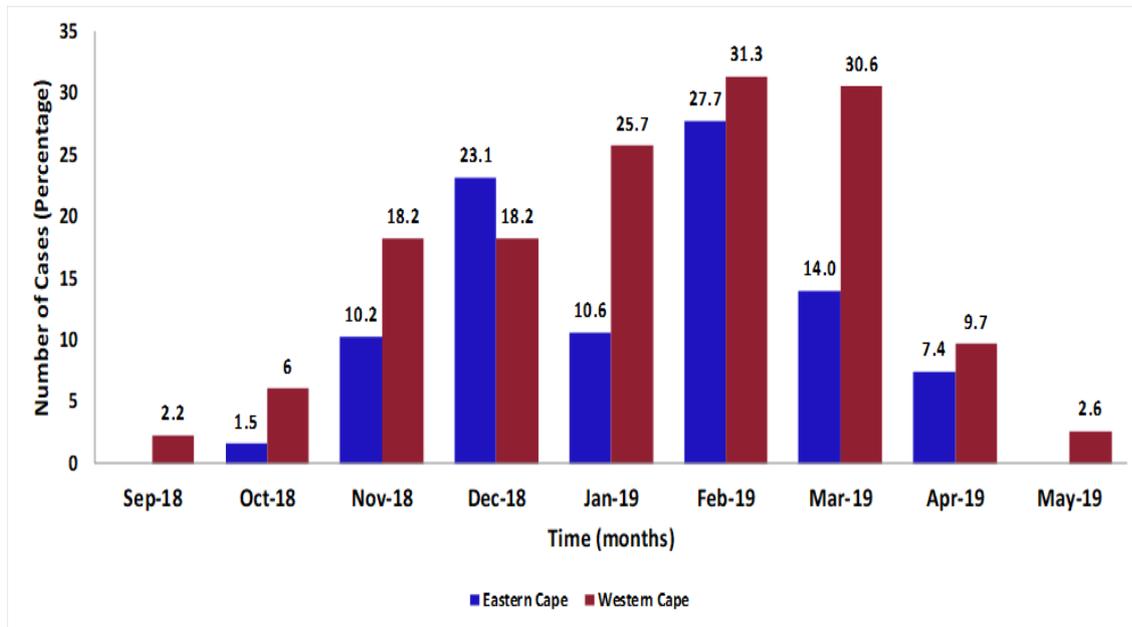


Figure 5. Monthly percentage of laboratory confirmed EV aseptic meningitis cases in the Western Cape and Eastern Cape provinces, September 2018 - May 2019.

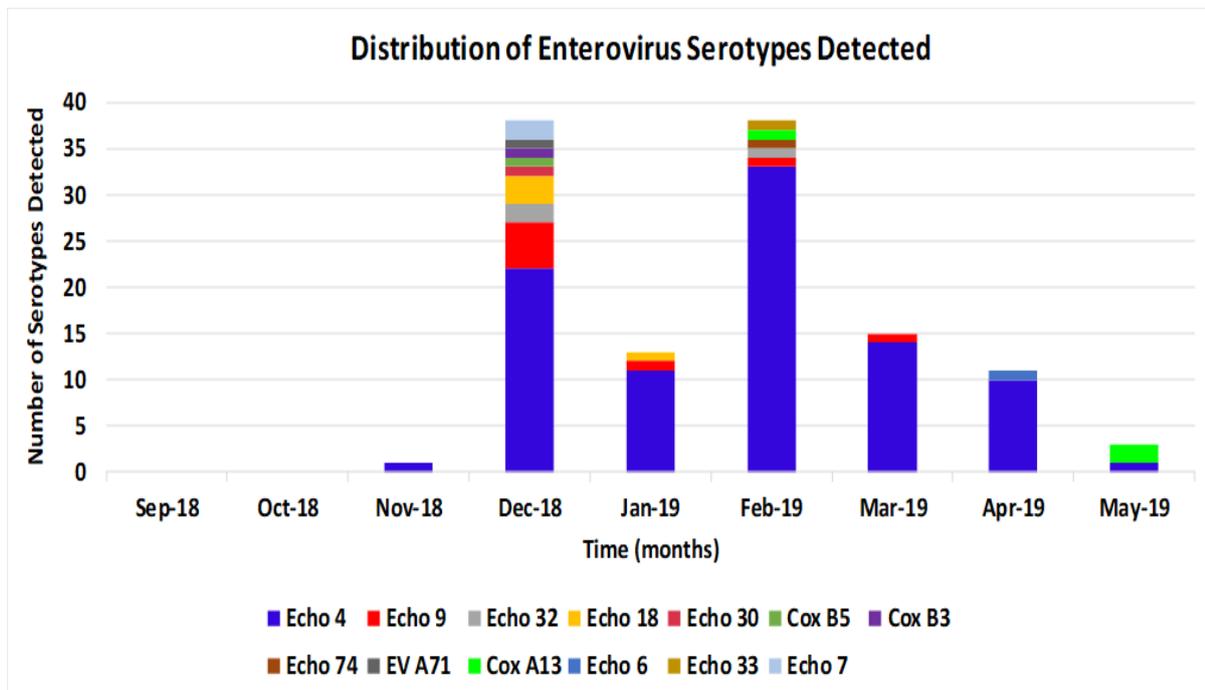


Figure 6. Distribution of enterovirus serotypes detected in the Western Cape and Eastern Cape provinces, September 2018 - May 2019.

6 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 10.

1. Influenza: Australia, Chile, South Africa, and New Zealand

As of 7 June 2019, Global Influenza Surveillance and Response System laboratories reported 5 285 specimens tested positive for influenza viruses, of which 3 157 (59.7%) were typed as influenza A and 2 128 (40.3%) as influenza B. Influenza A (H3N2) viruses predominated in Oceania and South Africa. However, influenza A(H1N1)pdm09 viruses predominated in South America.

Influenza is a viral infection that affects mainly the upper respiratory tract (nose and throat). Infection usually lasts for about a week. Symptoms include high fever, aching muscles, headache, severe malaise, non-productive cough, sore throat and rhinitis. The virus is transmitted easily from person to person via droplets and small particles produced when infected people cough or sneeze.

Most infected people recover within 1 to 2 weeks without medical treatment. In the very young, the elderly, and those with other serious medical conditions, infection can lead to severe complications such as pneumonia and death.

2. Amoebic dysentery: Kenya

The Public Health Office of Lamu in Kenya reported an outbreak of more than 100 people infected with amoebic dysentery.

Amoebic dysentery is a protozoan parasitic infection of the colon. Transmission occurs through drinking or eating uncooked food, such as fruit that may have been washed in contaminated water, or drinking contaminated water. It is most common in tropical areas with untreated water. Symptoms include diarrhoea, cramping, bloody stools, vomiting and fever. In severe cases, liver infections can occur. It is important to exclude other causes of bloody diarrhoea when treating infected people.

Good hygiene practices such as handwashing and cleaning food with clean water have been advised. Residents have been urged not to buy ready-made food on the streets, as it could be infected. Other public health responses included health education, in addition, free insecticide is being distributed to all homes, markets and public places to kill flies that may spread disease.

3. Circulating vaccine-derived polio virus: Cameroon

On 23 May 2019, WHO received notification through the Global Polio Laboratory Network of the detection of circulating vaccine-derived poliovirus type 2 (cVDPV2) from an environmental sample collected on 20 April 2019 in a hospital in Northern Cameroon, which borders Borno state in Nigeria and Chad. No associated cases of paralysis have been identified thus far. Genetic sequencing confirms that the isolate is associated with the ongoing cVDPV2 outbreak in neighboring Nigeria, which originated in Jigawa state and spread to other areas of Nigeria, as well as internationally to the Republic of Niger in 2018.

Circulating vaccine-derived polio virus emerges in populations where under-immunisation occurs. An excreted vaccine from a child immunised with oral polio vaccine can circulate in communities for an extended period of time leaving under-immunised communities susceptible to the disease.

WHO recommends all travellers to polio-affected areas be fully vaccinated against polio. Strengthening of surveillance systems for acute flaccid paralysis has also been recommended.

4. Dengue: Tanzania

A recent case of dengue in a Spanish traveller was reported at a sentinel site in Tanzania. Between 1 August 2018 – 28 April 2019, 1 288 suspected cases of dengue, including two deaths, were reported in the United Republic of Tanzania, of which 948 were confirmed. The most affected regions are Dar es Salaam and Tanga.

Dengue is caused by any one of four related dengue viruses, transmitted by mosquitoes. Persons with dengue may present with fever, nausea and vomiting, headache, joint pain, rash, or abdominal pain. Public health measures for control include reinforcing vector control, enhancing disease surveillance and social mobilisation through community awareness.

Source: Promed (www.promed.org), World Health Organization (www.who.int) and Geosentinel Sites

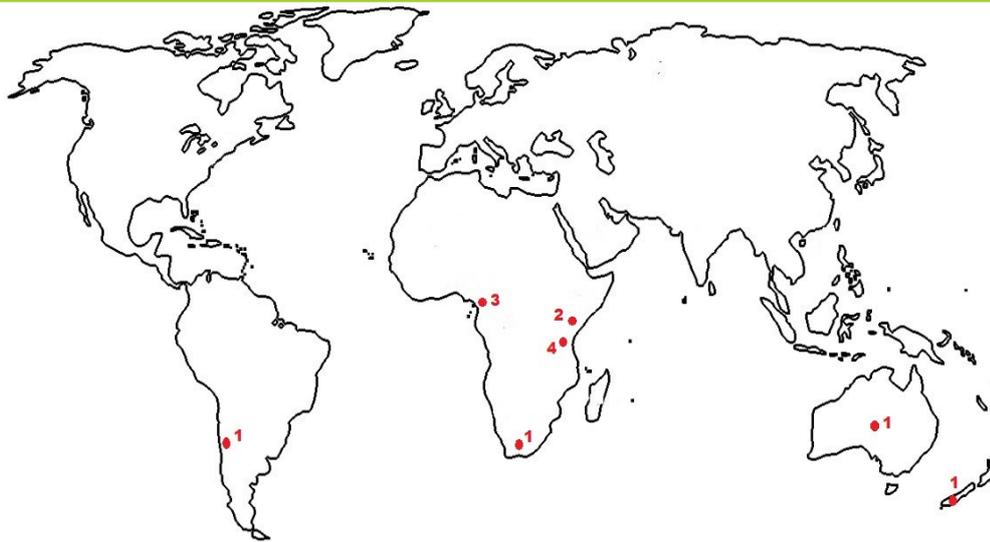


Figure 7. Current outbreaks/events that may have implications for travellers. Numbers correspond to text above. The red dot is the approximate location of the outbreak or event.

7 WHO-AFRO: OUTBREAKS AND EMERGENCIES

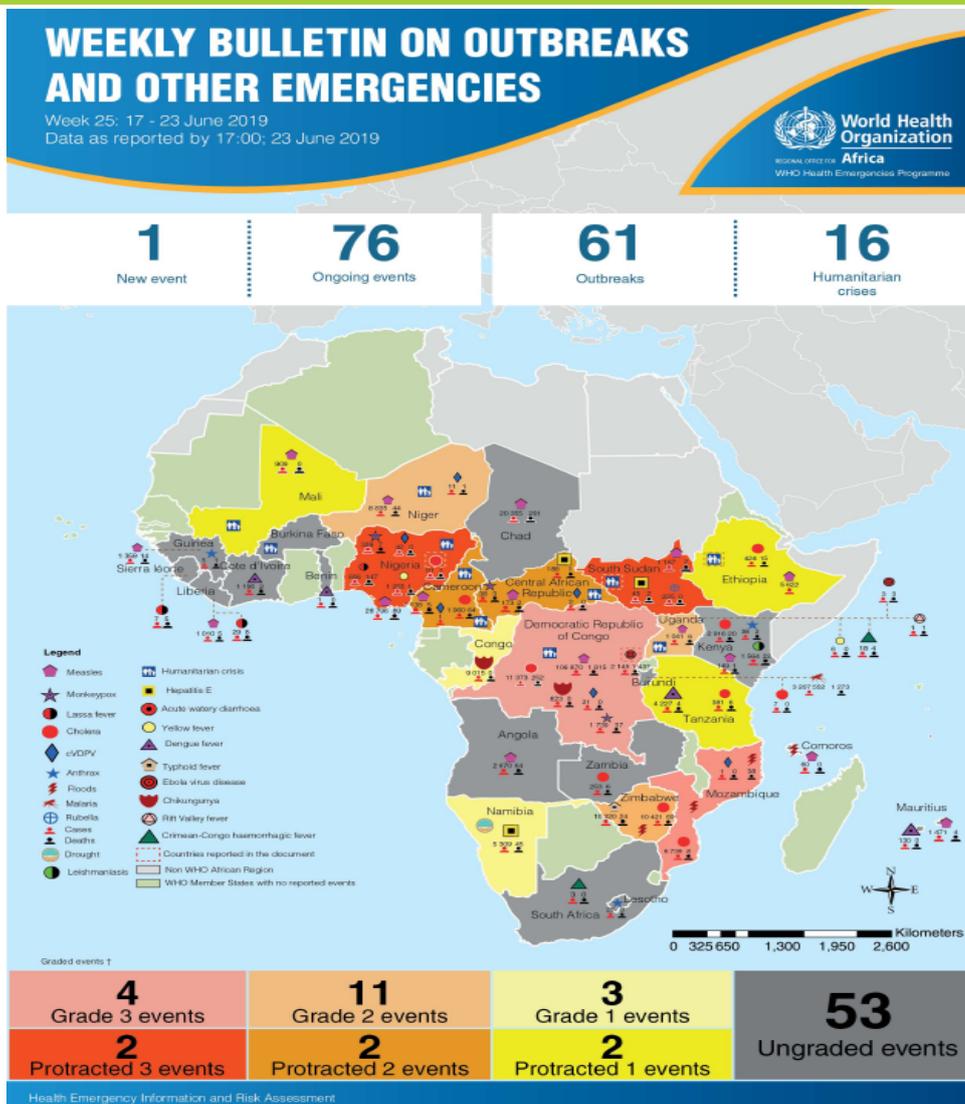


Figure 8. The Weekly WHO Outbreak and Emergencies Bulletin focuses on selected public health emergencies occurring in the WHO African Region. The African Region WHO Health Emergencies Programme is currently monitoring 77 events. For more information see link below: <https://apps.who.int/iris/bitstream/handle/10665/325542/OEW25-1723062019.pdf>