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## Editor's Note



Dr Ann Mathews

In the month of September, we review the state of rabies in South Africa, reporting on two new confirmed cases, bringing the total for 2020 to seven cases.

The eleventh Ebola Outbreak in the Equateur Province of the Democratic Republic of the Congo continues, with case numbers at 124 at 19 September 2020 and a case fatality ratio of 40%.

In August 2020, the African Regional Certification Commission declared that Africa is free of wild poliovirus, a big stride towards achieving the goal of global polio eradication. A summary of the events leading up to this notable event is provided.

As stated in previous issues of the Communique, the occurrence of invasive meningococcal diseases has seen a significant decline this year, a likely consequence of non-pharmaceutical interventions undertaken during the COVID-19 pandemic to reduce the spread of respiratory pathogens.

Other international outbreaks of significance include brucellosis in the Gansu Province of China, tick-borne encephalitis in Germany, West Nile virus in Florida, USA, and salmonellosis in the USA and Canada, all further discussed in our "Beyond our Borders" article.

**ZOONOTIC AND VECTOR-BORNE DISEASES****An update on rabies in South Africa**

Two additional cases of human rabies have been confirmed from KwaZulu-Natal Province during the month of August 2020.

The first case involved a two-year-old child from Umlazi (near Durban) who was admitted to a KwaZulu-Natal hospital with muscle fatigue, hyper-salivation and paralysis. It was reported that he had been bitten on his face two or three months prior to his illness. He had been bitten by a neighbour's dog, which was killed, but not investigated for rabies. The report stated that the child did not receive rabies post-exposure prophylaxis (PEP). On 31 August, three saliva samples obtained from the child tested positive for rabies virus by RT-PCR. The child died shortly after admission to hospital.

The second case involved a four-year-old child that died on 25 August 2020. In April 2020, the child was reportedly attacked by a dog in Marianhill, eThekweni and suffered injuries to his abdomen. Investigations found that the dog in question was still alive and vaccinated for rabies in 2017. Either the evidence is incorrect or the child acquired rabies from a different source. Following the injury, the child was taken to a healthcare facility, but no reports for provision of rabies PEP was available. The child fell ill in August with symptoms including vomiting, weak appetite, headache and dysphagia. The child was hospitalized, but died shortly after admission. Post-mortem investigation on brain and skin samples confirmed the clinical diagnosis of rabies.

For 2020 to date, a total of seven human cases of rabies has been reported in South Africa. These cases include four laboratory confirmed cases (including the two cases reported here), from KwaZulu-Natal (n= 3) and Limpopo (n=1) provinces. In addition, three probable cases were identified from Eastern Cape, KwaZulu-Natal and Limpopo provinces. Probable cases are those that presented with a clinical history and outcome, and epidemiological history compatible with a diagnosis of rabies, but laboratory confirmation was not possible.

World Rabies Day is commemorated worldwide on 28 September to raise awareness for the elimination of rabies. Rabies is a fatal, untreatable disease, but can be prevented firstly by vaccination of companion animals, most importantly domestic dogs and cats. Domestic dogs are linked to the majority of human rabies cases in South Africa. When possible exposures do occur, rabies virus infection can then be prevented by prompt application of rabies PEP. The latter includes thorough wound washing and treatment, provision of rabies vaccination and in cases where the exposure involved the breach of skin and contact with mucous membranes, the administration of rabies immunoglobulin. Rabies PEP is lifesaving emergency medicine.

For more information on rabies and the prevention of the disease please visit the NICD website: [www.nicd.ac.za](http://www.nicd.ac.za).

**Source:** Centre for Emerging Zoonotic and Parasitic Diseases, NICD-NHLS; [januszp@nicd.ac.za](mailto:januszp@nicd.ac.za)

**END RABIES:  
COLLABORATE, VACCINATE**  
[www.rabiesalliance.org/world-rabies-day](http://www.rabiesalliance.org/world-rabies-day)

**WORLD RABIES DAY  
SEPTEMBER 28**

## INTERNATIONAL OUTBREAKS OF IMPORTANCE

## An update on Ebola virus disease outbreak, Democratic Republic of Congo

On 1 June 2020, seven cases of Ebola were reported in Mbandaka city and neighbouring Bikoro Health Zone in Équateur Province, and an 11<sup>th</sup> Ebola virus disease (EVD) outbreak in the Democratic Republic of Congo (DRC) was declared.

The EVD outbreak in Équateur Province, Democratic Republic of the Congo, continues to see rising numbers of confirmed cases and increasing geographical spread. Between the 14 and 20 September 2020, three additional confirmed EVD cases had been reported, and two new deaths. The health area of Bekungu, in the Monkieka Health Zone, has not reported new confirmed or probable cases for 21 days, with the last confirmed cases reported on 29 August 2020.

As of 19 September 2020, there has been a total of 124 cases (118 confirmed and six probable) including 48 deaths (case fatality ratio 40.3%). The case fatality ratio among confirmed cases is 37.3% (44 deaths/118 confirmed cases). The number of health workers affected remains at three, making up 2.4% of all cases.

The number of health areas that have reported at least one confirmed or probable case of EVD since the start of this outbreak has risen to 40, in 12 of the 18 health zones in the province. The number of active EVD areas in the past 21 days (30 August 2020 to 19 September 2020) remain seven, with 15 confirmed cases recorded during this period.

On 19 September 2020, six out of seven health zones with active contacts submitted reports, with 82 new contacts reported in Lotumbe health zone. Out of 1 741 active contacts, 1 576 (90.5%) have been followed up. Of the 107 unseen contacts, 11 (10.3%) had never been seen, 15 (14.0%) were lost to follow-up and the remaining 81 (75.7%) were not seen in the previous 24 hours. Nine contacts became symptomatic, six in Lotumbe, two in Bikoro and one in Ingende.

A total of 632 new alerts (including nine deaths) was reported in nine health zones. A total of 700 alerts was recorded on 19 September, of which 612 (87.4%) were investigated and 209 (34.2%) were validated, with 49 (23.4%) sampled. A total of 31 179 people has been vaccinated since 5 June 2020. An additional 209 people were vaccinated with rVSV-ZEBOV-GP on 19 September, including 18 high risk contacts, 20 probable contacts and 15 first line providers.

The EVD outbreak in Équateur Province is of grave concern, given the continuing increase in case incidence and further geographical spread, with an additional health area affected in the last reporting week. The outbreak is further complicated by the COVID-19 outbreak, a long-standing measles outbreak and a complex humanitarian crisis in the country. Challenges continue around known confirmed cases still living in the community, contacts lost to follow-up and community burial practices. Of concern are the two affected health zones, namely Bomongo and Lilanga Bobangi, bordering the Republic of Congo, requiring reinforced trans-boundary surveillance. Additionally, there is a lack of funding for the response, particularly that required to prevent further spread, and inadequate human resources for risk communication and engagement in affected health zones and hotspots.

WHO reports that the ongoing EVD outbreak requires robust response activities in order to control this outbreak, break chains of transmission and engage the community in these activities. The response to EVD should be linked to existing COVID-19 activities in order to use resources efficiently. These efforts should be encouraged and supported nationally and by partners.

As of 25 September 2020, there are no EVD cases reported 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:** WHO: [www.who.int](http://www.who.int); WHO-AFRO, Division of Public Health Surveillance and Response, NICD-NHLS; [outbreak@nicd.ac.za](mailto:outbreak@nicd.ac.za)

## VACCINE-PREVENTABLE DISEASES

### Eradication of wild poliovirus in African region

On 25 August 2020, the African Regional Certification Commission declared that Africa is free of wild poliovirus. This milestone is a big stride towards achieving the goal of global polio eradication. Polio is targeted to be the second human disease, after smallpox, globally eradicated through vaccination.

Polio is a viral illness that can cause sudden weakness and permanent paralysis or death in previously healthy individuals, often children. There are three serotypes of wild poliovirus, types 1, 2 and 3. In 1988, when the Global Polio Eradication Initiative was launched, polio was found in more than 125 countries of the world and paralysed more than 350 000 people that year. Polio used to cause large outbreaks throughout the world and in Africa. The last case of wild poliovirus in South Africa was in 1989. The last case of wild poliovirus type 1 in Africa was from Nigeria, 2016. Wild poliovirus type 2 has been declared

globally eradicated in 2015 and type 3 in 2019. Globally there are two countries remaining endemic for wild poliovirus type 1, Pakistan and Afghanistan.

Polio is preventable through immunization with polio vaccine, either injectable or oral. Polio vaccination will continue until eradication of wild poliovirus globally. There remains work to be done, as wild poliovirus remains a threat while still existing anywhere in the world. Additionally, circulating vaccine derived poliovirus still causes small outbreaks. Immunization against polio remains the foundation of polio eradication. The declaration of Africa as free of wild poliovirus shows that the prospect of global polio eradication is achievable. For more information see [www.africakicksoutwildpolio.com](http://www.africakicksoutwildpolio.com). For a documentary of South African polio survivor's stories, see <https://www.nicd.ac.za/diseases-a-z-index/poliomyelitis/>

**Source:** Centre for Vaccines and Immunology, NICD-NHLS; [melindas@nicd.ac.za](mailto:melindas@nicd.ac.za)

## SEASONAL DISEASES

### Invasive meningococcal disease (IMD) surveillance update

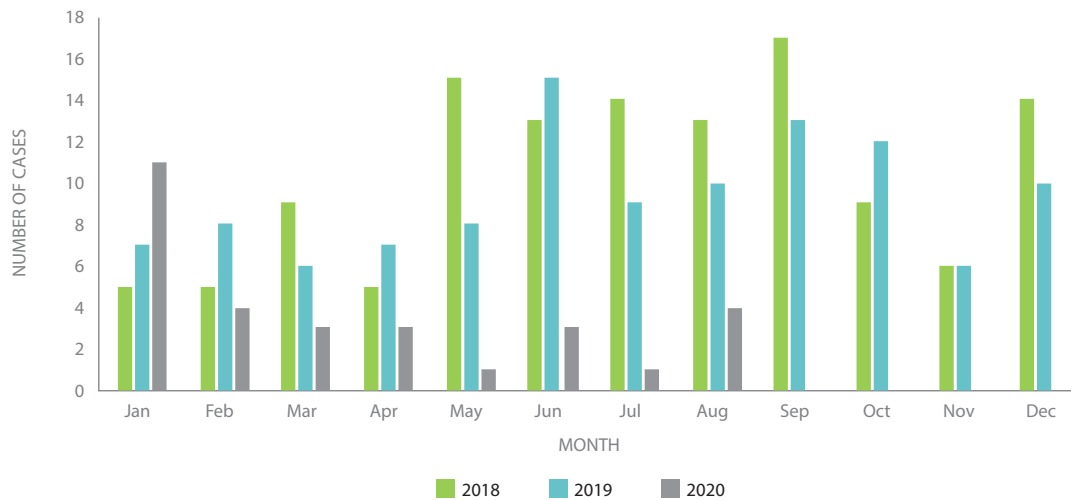
January to August 2020

At the end of the winter months we continue to see few cases of invasive meningococcal disease (IMD) in South Africa. From January until the end of August 2020 only 30 cases of laboratory-confirmed IMD have been reported through the surveillance network. This is far less than in the equivalent time-period in 2018 (79 cases) and 2019 (70 cases) (Figure 1). This reduction may be due to measures implemented nationally to reduced transmission of respiratory droplets through social distancing of persons, school closures and mask-wearing. Therefore, *Neisseria meningitidis* bacteria (carried asymptotically in the human oropharynx and spread through respiratory droplets) transmission may also have been affected. While changes in health-seeking behaviour could have contributed to reductions, this is unlikely as invasive meningococcal disease is a severe illness.

IMD has occurred sporadically throughout the year. Most cases are from the Western Cape Province (14 cases, 47%), followed by Eastern Cape and Gauteng (6 cases each, 20%), and KwaZulu-Natal and Mpumalanga provinces (2 cases each, 7%). Thirty-seven percent (11/30) of IMD episodes occurred in children <5 years of age. Of the isolates available for serogrouping (21/30), serogroup B (10/21, 48%) was the most predominant followed by serogroup W (6, 29%), Y (3, 14%) and C (2, 10%).

Meningococcal disease has the potential to cause clusters and outbreaks. Therefore, please note that meningococcal disease is a category 1 notifiable medical condition (NMC) and any clinically suspected or laboratory-confirmed case should be reported immediately to the provincial Communicable Disease Control Coordinators to ensure appropriate contact tracing, responsible prescribing of chemoprophylaxis and case counting.

## SEASONAL DISEASES



**Figure 1.** Number of invasive meningococcal disease cases reported to the GERMS-SA surveillance programme by month and year, January 2018 through August 2020, N=266

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

## Alert: malaria transmission risk season

The malaria transmission season in southern Africa traditionally commences around the start of summer and is largely determined by climatic factors. Malaria control measures in South Africa's three endemic provinces (KwaZulu-Natal, Mpumalanga, and Limpopo) in the form of indoor residual insecticide spraying, are intended to interrupt transmission by reducing populations of vector mosquitoes, and to detect, report, and investigate malaria cases and clusters. The current COVID-19 pandemic has negatively impacted important public health programmes, such as tuberculosis and childhood vaccination, by shifting the priorities of healthcare workers and available funds to COVID-19-related activities, and also by discouraging the public from visiting clinics and other healthcare facilities. Restrictions on travelling had the effect of limiting importation of malaria, but these have now been lifted. While the peak of the pandemic appears to have past, it is important not to forget that malaria is another major public health problem. At the community level, malaria control programme activities need to proceed timeously, with necessary COVID-19-related precautions (e.g. small group spraymen training and operations, use of appropriate personal protective equipment, etc). At individual level, members of the

public need to be reminded about the risks of malaria and about preventive actions such as chemoprophylaxis and antimosquito measures, particularly when travelling across the now-open borders to high-risk neighboring countries. Healthcare workers need to remember that there is an overlap between early malaria and COVID-19 clinical presentations, namely that both produce febrile 'flu-like symptoms. The overlap between these infections continues with more serious infections, because severe malaria frequently results in a sepsis-like picture including respiratory distress (ARDS) that can clinically resemble COVID-19 lung involvement. Unrecognised and untreated malaria can rapidly progress to severe illness with a high mortality, and we again remind readers that even non-malaria-endemic provinces (particularly Gauteng) receive imported malaria cases throughout the summer months. Finally, sometimes malaria vector mosquitoes are transported accidentally, and transmit malaria outside their normal habitats to persons with no travel history. While traditionally, influenza was blamed for febrile illness in these 'minibus', 'luggage' or 'taxi-rank' malaria cases, malaria may now be mistakenly diagnosed as COVID-19. A high index of suspicion for malaria is essential to prevent unnecessary illness and deaths.

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

## 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 2 on page 7.

### Brucellosis – China: Gansu

As of Monday 14 September 2020, a total of 3 245 people had tested positive for brucellosis in Lanzhou, North West of China's Gansu Province. This is according to an investigational report into the brucellosis antibody positive event that occurred in December 2019, at Lanzhou Veterinary Research Institute. A total of 21 877 people had been tested with 3 245 positive cases being confirmed by the Gansu Provincial Centre for Disease Control and Prevention.

The main exposure is said to have occurred between 24 June 2019 and 20 August 2020 when Zhongmu Lanzhou biological pharmaceutical factory, near the Lanzhou Veterinary Research Institute, used expired disinfectant in the process of brucella vaccine production for animal use. This led to incomplete sterilisation of the waste gas from the production fermentation tank. The waste gas carrying the fermentation liquid, containing bacteria, formed bacteria-containing aerosols. During the production period, the prevailing wind direction in the region was

southeast, making Lanzhou Veterinary Research Institute directly downwind of the factory and resulting in the observed infections. The factory has reported this as an accidental exposure.

A report released by the Health Commission of Lanzhou this month states that compensation will be carried out in batches in October 2020 to effectively protect people's health and interests. In addition to this, 11 public medical institutions have been designated as relevant hospitals, with green channels and specialised clinics to provide free and convenient health testing and standardised treatment. Health records have been established for those who tested positive, and specially assigned staff will carry out monthly health follow-ups with the infected individuals. There is also a drive to increase public awareness of the disease which will include on site and online counselling, telephone hotlines and the distribution of information brochures.

### Tick-Borne Encephalitis (TBE) – Germany

Germany has seen record numbers of tick-borne encephalitis cases with more than 530 human cases reported to the German governmental agency, Robert Koch-Institute. This year about 90% of all cases have been reported from the federal states of Baden-Württemberg and Bavaria. Historically, districts at higher altitudes of 550 to over 600 meters above sea level are more heavily affected than districts in lower altitude due to higher population of ticks in these regions.

Authorities are indirectly attributing part of the increase in cases to the COVID-19 pandemic. Due to the pandemic many citizens have spent their holidays in Germany, especially in the mountainous recreational areas of Southern Germany. As such, there has been increased exposure to ticks in these regions and consequently increased risk of TBE infections.

In addition to the described indirect COVID effect, record numbers of ticks have been observed for three consecutive years with unusually high numbers of TBE virus (TBEV)-infected adult ticks in 2020. The change of weather (and climate change in a longer aspect) during the last years, with record temperatures and mild winters, is the apparent reason for increased survival of ticks and for an intensified virus circulation among rodents and ticks at the higher altitudes.

The current TBE vaccination recommendations for inhabitants and visitors must be revisited and adapted to the new epidemiological situation.

## BEYOND OUR BORDERS

## West Nile Virus (WNV), USA: Florida

Miami-Dade County has now seen more than 50 reported cases of West Nile virus since the first two cases of the infection in May this year. On Friday 11 September 2020, the Florida Department of Health in Miami-Dade County announced five more human cases, bringing the total count to 54 cases in 2020. Miami-Dade County's mosquito-control chief attributes much of the resurgence in the summer to heavy rains causing an increase in mosquito populations. As such, the county has been placed under a mosquito-borne-illness alert. The health department has also been working with the Department of Solid Waste Management to introduce mosquito control prevention efforts in the exposure areas. The state department of Health says the West Nile virus is the leading cause of

mosquito-borne disease in the United States. Health officials have encouraged the motto "drain and cover." This promotes draining of standing water in garbage cans, gutters, buckets, pools, coolers, birdbaths, pet water bowls and the like, to reduce areas where mosquitos can lay eggs and thrive. In addition, residents should cover with clothing and apply repellent for protection from mosquitos.

So far this year, as of 9 September 2020, the CDC has reported 81 cases in 18 states country wide. It is expected that transmission of WNV will continue across the USA until the onset of killing frosts ends mosquito activity for the year.

## Salmonellosis – USA, Canada

In Canada, there have been 506 confirmed cases of *Salmonella* Newport (*enterica* serotype), as of 14 September 2020, linked to a *Salmonella* outbreak associated with onions. This outbreak spans several Canadian provinces and has also crossed to the USA side of the border where it has affected at least 1 012 people across 47 states (as reported 1 September 2020).

Public health officials in the USA report having identified 34 illness clusters in 13 of the implicated states. Information on 23 of the 34 clusters was collected at restaurants and grocery stores. Of the patients interviewed thus far in the USA, 90% report specifically eating onions or foods

containing onions during the days before they developed symptoms of *Salmonella* infection.

The company that had shipped and supplied the implicated onions has initiated recalls of their onions and related onion-products in both Canada and the USA. Investigations conducted by the Canadian Food Inspection Agency and the USA Food and Drug Administration have shown a link between the illness and red onions; however because of the way the onions are grown, harvested and packed, other onion types (e.g. white, yellow or sweet yellow) are also likely to be implicated.



**Figure 2.** 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.

**WHO AFRO UPDATE**



**Figure 3.** 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 116 events. For more information see link below:

<https://apps.who.int/iris/bitstream/handle/10665/334353/OEW38-1420092020.pdf>



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**COMMUNICABLEDISEASES****COMMUNIQUÉ**