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## **EDITORIAL**

This month, parts of Mozambique, Zimbabwe and Malawi have been devastated by the cyclone Idai. Large-scale relief operations are underway by a number of humanitarian aid organisations and the South African government. Surveillance mechanisms are being set up to facilitate early detection of communicable disease. At the time of compilation, no reports of communicable disease associated with cyclone-affected areas are available to the NICD.

South Africa continues to experience increased case loads of a number of communicable diseases reported in this edition. Human rabies cases continue to be reported, with a third laboratory-confirmed case diagnosed in the Eastern Cape Province this month. Three additional pertussis cases have brought the total of laboratory-confirmed cases in Nelson Mandela Metropolitan to 119 since November 2019. An increased case-load

of enteroviral meningitis cases has been observed in Garden District in the Western Cape Province and Sara Baartman District in the Eastern Cape Province. This increased case load was initially identified in Khayelitsha in the Western Cape Province and reported in the December 2018 Communiqué. Clinicians are requested to be aware and to submit specimens to NHLS Tygerberg (see NICD website, [www.nicd.ac.za](http://www.nicd.ac.za)). We report on the third case of imported trypanosomiasis in the last four months, and on an outbreak of suspected scarlet fever in the Waterberg district of Limpopo Province.

In this edition we provide an update on the South African malaria season, the ongoing Ebola virus disease outbreak in the Democratic Republic of the Congo, and the northern hemisphere influenza season.

## 1 ZONOTIC AND VECTOR-BORNE DISEASES

### a An update on rabies in South Africa

A second case of human rabies was confirmed from the Eastern Cape Province this year. The case involved an 8-year-old boy from Libode, Nyandeni, O.R. Tambo District. In December 2018, a dog attacked the child without provocation. The child received no rabies post-exposure prophylaxis for the dog bite injury. About two months later, the child developed disease compatible with rabies, including muscle spasms, hydrophobia, hypersalivation and delirium. The patient died on 20 February 2019, one day following admission to hospital. The NICD confirmed the clinical diagnosis of rabies based on detection of virus in post-mortem collected brain sample by immunofluorescence assay test.

In addition, two probable cases of rabies were reported from the Limpopo Province. For both cases, exposure to potentially rabid animals was reported and a clinical presentation compatible with rabies was observed. Both cases died. For one of the cases, exposure involved a cow that was

reportedly sick. For both patients, only a single saliva sample was available for testing that tested negative. This does not exclude the diagnosis of rabies.

For 2019 to date, three human deaths from rabies have been confirmed in South Africa. These occurred following three unprovoked dog attacks in December 2018 in Eastern Cape (O.R. Tambo District (n=2) and Limpopo (Vhembe District) provinces.

Without post-exposure prophylaxis, rabies exposure followed by symptom onset is fatal. Exposures from potential rabid dogs, cats or wild animals such as mongoose or jackal must be clinically managed according to the national guidelines to prevent rabies disease. The guidelines and further information on rabies are accessible on [www.nicd.ac.za](http://www.nicd.ac.za). Rabies is preventable using post-exposure prophylaxis.

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

### b East African trypanosomiasis

A game hunter working in an area close to the South Luangwa Game Reserve, Zambia, was admitted to a private Johannesburg hospital on 17 March with laboratory-confirmed East African trypanosomiasis (EAT). A typical chancre was noted on his hand, and a scanty trypanosome parasitaemia was present on a Giemsa-stained blood smear. He was moderately hypotensive with tachycardia, mild acidosis but no definite myocarditis, and no clinical respiratory or central nervous system involvement. He had a profound leucopenia, thrombocytopenia (but no bleeding) and moderately deranged hepatic transaminases, and normal renal function. Suramin treatment was started promptly after admission, with a satisfactory clinical response. A CSF examination showed no abnormalities. This is the third case of EAT admitted to the hospital in the past four months. The earlier cases were a person working in Malawi (fatal infection), and one working in a game management area close to the Lower Zambezi National Park.

People travelling and working in game reserves in northern Zimbabwe, Zambia and Malawi should be aware of the risk of EAT, which carries the potential

for serious and fatal disease if infection is not diagnosed and treated promptly. While tsetse flies are common in these endemic areas, and are aggressive daytime biters, only a small percentage of bites are infective. Pale-coloured clothing and insect repellents assist in reducing exposure, but if fever and malaria-like symptoms occur within a few days to three weeks after travel in tsetse-infested areas, the possibility of EAT must be considered. The trypanosomal chancre, which is a skin lesion resulting from an infected tsetse fly bite, is typically present, but not invariable, and may often be mistaken for a tick or spider bite or a bacterial infection. See NICD Communicable Diseases Communiqué, Vol 18(1), January 2019, for more information about diagnosis and treatment of EAT. A local case series with photographs of trypanosomal chancres is available online: <https://doi.org/10.1016/j.ijid.2018.08.012>

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

## 2 VACCINE-PREVENTABLE DISEASES

### a Update on the increase in pertussis cases, Nelson Mandela Bay Health District, Eastern Cape, 2018-2019

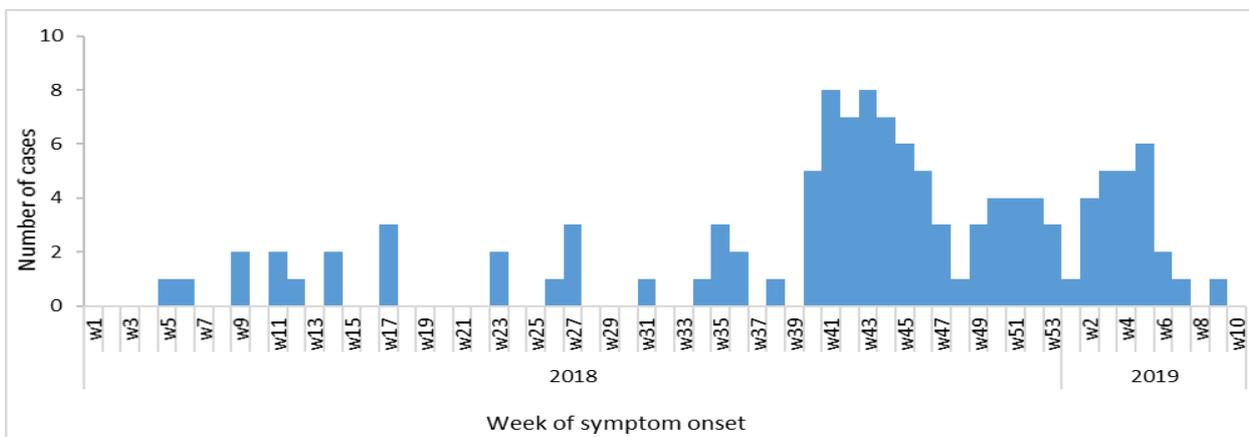
From 1 January 2018 to 18 March 2019, 119 laboratory-confirmed pertussis cases have been reported by health facilities in Nelson Mandela Bay Health District (NMBHD). This represents three additional confirmed cases reported since the last report (21 February 2019). Date of symptom onset for the three cases was 4 February (week 6), 10 February (week 7) and 1 March 2019 (week 9). From beginning of week 6, a decrease in number of confirmed cases reported has been observed (Figure 1).

A public health response including contact tracing and provision of post-exposure prophylaxis has been reported for 55% (65/119) of confirmed cases. Eight cases could not be traced successfully due to unknown address (2/8), incorrect address (4/8) and unavailability at time of visit (2/8). Of 388 contacts identified, 68% (263/388) are reported to have received chemoprophylaxis. Ongoing passive surveillance for cases presenting at hospitals and active surveillance amongst

contacts is being conducted, and the situation is being monitored.

Pertussis (also known as whooping cough) is a highly contagious, vaccine-preventable respiratory tract disease. Though it can affect persons of all ages, young unimmunised and partially immunised infants are most vulnerable to the disease and are at high risk of complications and death. Clinicians are advised to be on alert for cases, notify cases, identify and manage contacts of persons with confirmed and suspected pertussis. NICD recommendations for pertussis diagnosis, management and public health response are available on the NICD website.

**Source:** Eastern Cape Provincial Department of Health; Nelson Mandela Bay Health District; South African Field Epidemiology Training Programme; Centre for Respiratory Diseases and Meningitis and the Division of Public Health, Surveillance and Response, NICD-NHLS; sibongilew@nicd.ac.za



**Figure 1.** Epidemic curve of laboratory-confirmed pertussis cases by week of symptom onset, Nelson Mandela Bay Health District, Eastern Cape, 1 January 2018 to 19 March 2019 (N=119)

## 3 SCARLET FEVER

### a Suspected scarlet fever cases at a school in Waterberg District, Limpopo Province, March 2019

A cluster of clinically-diagnosed cases of scarlet fever was reported from a primary school and a crèche adjacent to the school in Vaalwater, Limpopo Province in March 2019. An investigation was carried out to ascertain existence of an outbreak, establish the extent of disease spread, identify the

source of infection and to implement control measures. Learners and teachers at the school were screened for signs and symptoms. In addition, case finding was conducted through record review and interviews at a local clinic. Parents of the suspected cases were interviewed telephonically to

establish details about the illness. Throat swabs were collected from the affected learners and submitted to the Centre for Respiratory Disease and Meningitis at the NICD for testing.

The first two cases were five-year-old grade R learners at the primary school who fell ill on 7 March 2019 (Figure 2). Ten learners were identified from grades R to three with a median age of 6 (range 5-12) years old. Of these, four were siblings. In addition, five teachers and one administrative staff member reported symptoms. Cases presented with inflamed throat (n=12), fever (n=10), strawberry tongue (n=6), rash (n=6) and cervical lymphadenopathy (n=5).

All suspected cases were advised to stay at home until they no longer had a fever and have taken antibiotics for at least 24 hours. Scarlet fever awareness and Health Education pamphlets were given to the school learners, teachers and parents. Health facilities in the Waterberg District were alerted about the suspected scarlet fever outbreak to heighten surveillance. All suspected cases had improved following start of antibiotics.

All samples tested were negative for group A streptococcus on PCR and culture.

### Focus on scarlet fever

Scarlet fever is not a notifiable medical condition in South Africa. Some countries where scarlet fever is a notifiable condition have reported a resurgence of scarlet fever in recent years [1-4]. In 2016, England reported the highest incidence rate (33.2/100 000) of scarlet fever since 1967 [2]. In Beijing China, the annual incidence rates ranged from 7 to 14 cases/100 000 population from 2006-2010 and rose to 31.4/100 000 population in 2011 [1, 4]. The incidence rates in South Korea, increased from 0.3 cases/100 000 persons in 2008 to 13.7/100 000 in 2015 [3].

Scarlet fever is a bacterial infection caused by pyrogenic exotoxin-producing *Streptococcus pyogenes* also known as group A streptococcus (GAS). It commonly affects children from 5 to 15 years of age. Symptoms, which include fever, headache, sore throat, flushed face and swollen tongue, usually present two to five days after infection with GAS. Scarlet fever is usually associated with concurrent streptococcal pharyngitis but may be associated with a streptococcal infection at other sites. The incubation period can be as short as one day and as long as seven days. The characteristic rash is a fine erythematous eruption which feels like sandpaper, blanches on pressure and usually starts on the

chest and stomach, but soon spreads outwards to other parts of the body, such as the ears, neck, elbows, inner thighs and groin. The rash usually appears 12-48 hours after symptom onset. On darkly pigmented skin the rash maybe difficult to see but will be palpable. The rash usually spares the face, palms and soles. However, the cheeks become flushed and the area just around the mouth stays pale, termed circumoral pallor. A white coating with red papillae may initially cover the tongue, this eventual disappears leaving a red 'strawberry tongue'. The rash fades after about a week but desquamation, usually of hands and feet, may continue for several weeks afterwards. In milder presentations, rash maybe the only symptom present.

GAS infections, including scarlet fever, commonly spread through direct person-to-person transmission. The most common risk factor is close contact with a person with scarlet fever. Crowded settings such as schools and day care centres/crèches increase the risk of spread.

Clinicians are reminded that early diagnosis is an important part of management. Antibiotic treatment should be initiated in patients with suggestive clinical presentations without waiting for laboratory confirmation. Antibiotic treatment has been shown to shorten the duration of symptoms and eliminate GAS from the throat thus reducing chances of transmission to others contacts. Antibiotic treatment also prevents acute rheumatic fever and development of other complications (e.g. rheumatic heart disease, abscesses and cellulitis). Penicillin (benzathine penicillin IM single dose or a 10-day course of oral penicillin) is the drug of choice, with macrolides as an alternative.

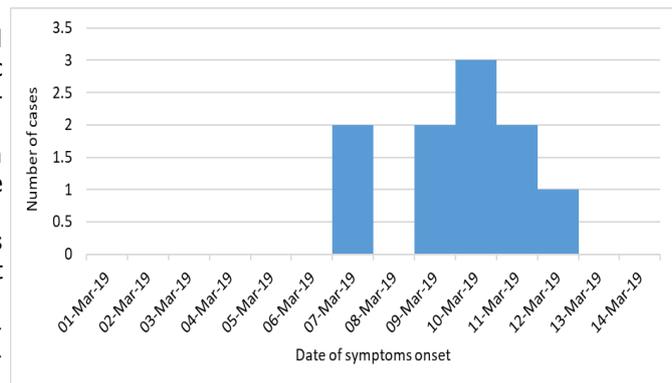
Bacterial culture of throat swabs is the gold standard for diagnosis and is important to distinguish from other cases of rash. The Centre for Respiratory Diseases and Meningitis at NICD can assist with laboratory testing. However, all requests for testing should be accompanied by the request form available at: [http://www.nicd.ac.za/wp-content/uploads/2019/03/CRDM-specimen-submission-form-v1\\_28-Feb-2019.pdf](http://www.nicd.ac.za/wp-content/uploads/2019/03/CRDM-specimen-submission-form-v1_28-Feb-2019.pdf)

Good hand hygiene and respiratory etiquette (covering coughs/sneezes) can reduce the spread of group A streptococcus infections. People with scarlet fever or other GAS infections should stay at home until they are afebrile and for at least 24 hours after initiating a course of antibiotics.

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**Source:** Limpopo Department of Health; Division of Public Health Surveillance and Response, and Centre for Respiratory Diseases and Meningitis, NICD-NHLS; sibongilew@nicd.ac.za



**Figure 2.** Epidemic curve showing the date of onset of suspected scarlet fever cases in school children (n=10), Waterberg District, March 2019

## 4 INTERNATIONAL OUTBREAKS OF IMPORTANCE

### a Ebola virus disease outbreak, Democratic Republic of Congo (DRC)

The Ministry of Health (MoH), WHO and partners continue to respond to the ongoing Ebola virus disease (EVD) outbreak in the Democratic Republic of the Congo (DRC). Since the last report on 10 March 2019, 30 new confirmed EVD cases have been reported, with an additional 16 deaths. As of 16 March 2019, a total of 951 EVD cases (886 confirmed and 65 probable) has been reported. A total of 598 deaths was recorded, including 533 among confirmed cases, resulting in a case fatality rate among confirmed cases of 60% (533/886). Two new health care workers (HCW) have been affected, bringing the cumulative total of infected HCW to 77, with 26 deaths.

To date, confirmed cases have been reported from 20 health zones: Beni (226), Biena (6), Butembo (90), Kalunguta (47), Katwa (264), Kayna (6), Kyondo (17), Mabalako (91), Mangurujipa (5), Masereka (14), Musienene (6), Mutwanga (4), Oicha (31), Vuhovi (17) and Lubero (2) in North Kivu Province; and Rwampara (1), Komanda (27), Mandima (29), Nyankunde (1), and Tchomia (2) in Ituri Province. Eleven of the 20 affected health zones reported at least one new confirmed case in the previous 21 days (24 February to 16 March 2019).

Katwa and Butembo, two neighbouring urban areas remain hotspots, combined they contribute almost three-quarters of new EVD cases. North Kivu and Ituri provinces have been linked to chains of trans-

mission in Katwa and Butembo. Risk of further chains of transmission and spread remain high and response teams need to centre their attention on these two areas without neglecting other areas to avoid potential recurrence of cases in the areas that already have the disease.

#### Public health response

The MoH 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.

Health authorities in the Democratic Republic of the Congo and in Uganda have collaborated in monitoring displaced contacts. A coordination unit has been established for monitoring and analysis of lost contacts in Bunia.

As of 16 March 2019, a cumulative total of 88 710 people has been vaccinated since the start of the outbreak. There is continuation of ring vaccination in Beni, Katwa, Mandima, Butembo, Biena, Lubero

(around confirmed cases), Musienene, Masereka and Goma Health Zones for front-line providers.

Point of Entry/Point of Control (PoE/PoC) screening continues, with over 42 million screenings to date. A cumulative total of 864 alerts was notified, of which 202 were validated. A total of 70/80 (88%) PoE/PoC was functional as of 15 March 2019.

Implementing response measures in affected areas has been a challenge so far due to prolonged humanitarian crisis, the unstable security situation, the resistance amongst the population and the recent elections. This is concerning as the outbreak

also affects areas with cross-border population flow with Rwanda, South Sudan, and Uganda.

**Situation in South Africa**

As at 19 March 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:** WHO: [www.who.int](http://www.who.int); Division of Public Health Surveillance and Response, NICD-NHLS ([outbreak@nicd.ac.za](mailto:outbreak@nicd.ac.za))

## 5 SEASONAL DISEASES

### a Update on malaria

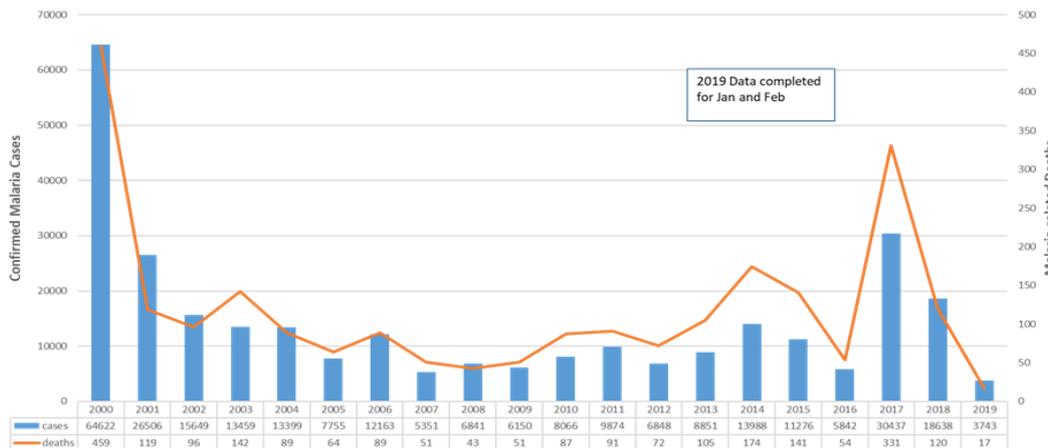
The summer malaria season is still in progress. Figure 3 shows updated malaria case numbers for 2018 and the first two months of 2019, confirming the substantial decline from the recent upsurge in 2017.

The Gauteng Provincial Department of Health held its Malaria Case Management Symposium on 14 March 2019. This was aimed primarily at clinicians, to equip them to manage the substantial burden of imported malaria cases that the province deals with annually. Figure 4 illustrates the incidence of malaria cases by district in Gauteng Province in 2018. Where a travel history was elicited, Mozambique was the site of acquisition of infection in the vast majority of cases. In 2017, Gauteng Province recorded 1 485 cases with 27 deaths (mortality rate 1.8%), but despite the substantially reduced national malaria incidence in 2018, the number of cases in Gauteng Province increased to 3 070. However, the mortality rate dropped to 0.6%. Wid-

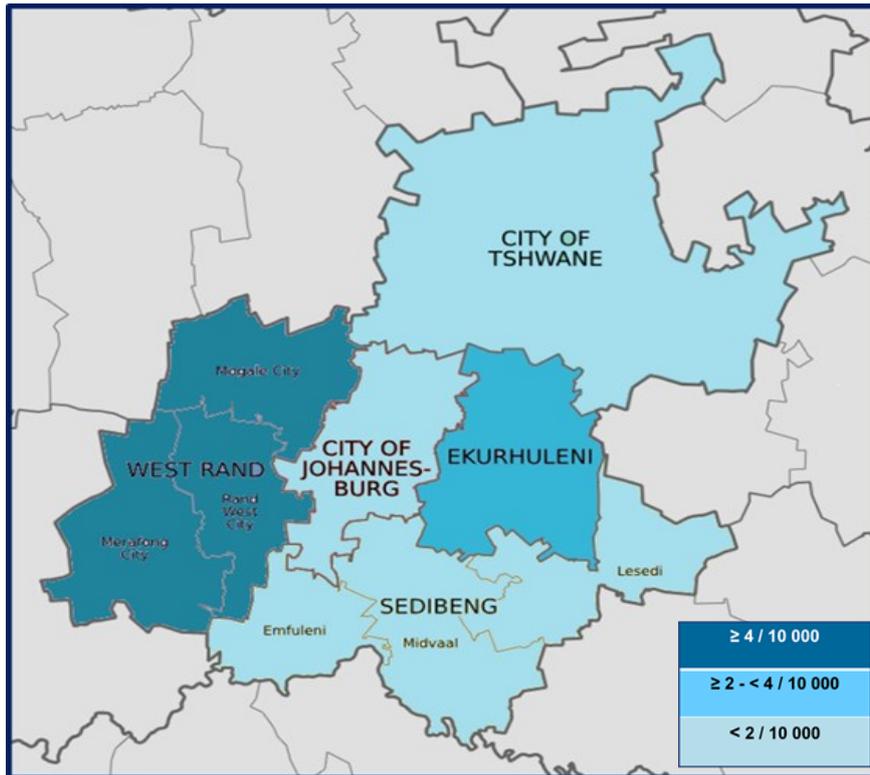
er availability of artesunate may have contributed to this improved mortality rate, but some smaller hospitals do not yet stock the drug. The latest national malaria treatment guidelines clearly recommend artesunate as the antimalarial drug of choice for severe and complicated malaria.

The Gauteng Provincial Department of Health will be strengthening its policy of diagnosis (rapid diagnostic test) and treatment (Coartem) of uncomplicated malaria in adults at primary health clinics, initially in the high-incidence district of Ekurhuleni (Figure 4). All severe and complicated malaria cases will be referred to hospitals for treatment. The national guidelines for the treatment of malaria are available on the NICD website ([www.nicd.ac.za](http://www.nicd.ac.za)).

**Source:** Centre for Emerging Zoonotic and Parasitic Diseases and Field Epidemiology Training Programme, NICD-NHLS; Gauteng Provincial Department of Health; [johnf@nicd.ac.za](mailto:johnf@nicd.ac.za)



**Figure 3.** Malaria cases and deaths, South Africa, 2000 to February 2019. Source: National Department of Health. Data subject to updating.

**Figure 4.**

Imported malaria incidence rates per district, Gauteng Province, South Africa, 2018. Source: Gauteng Provincial Department of Health

## b Update on influenza in the northern hemisphere

Influenza activity continues in the temperate zone of the northern hemisphere. In Canada, influenza-like-illness (ILI) activity remains low overall, and in the United States ILI activity has started to decrease at national level, but remains above baseline. In Europe, influenza activity has decreased across the continent although two-thirds of countries are still above baseline. In East Asia, influenza activity appears to have plateaued, whereas in Western Asia influenza activity has decreased in most countries. Severe acute respiratory infections remain elevated in Central Asia.

Although our influenza season has not started, sporadic detections of influenza have been made, and

clinicians should have a high index of suspicion for influenza, especially in returning travellers from the northern hemisphere. The 2019 southern hemisphere influenza vaccine is now available at private pharmacies and will be available at the public health facilities by the first week of April 2019. Influenza vaccine is recommended for individuals at risk of severe complications of influenza, including pregnant women, persons with underlying chronic medical conditions and persons aged <5 years or ≥65 years.

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

## c Enteroviral meningitis—request for health care workers to be aware

An outbreak of enteroviral meningitis cases amongst Khayelitsha residents was reported in the NICD Communiqué, December 2018. Subsequently, an increase in cases have been reported from several communities in the City of Cape Town, Garden Route district municipality (George and Mossel Bay), Western Cape Province, and Sarah Baartman District Municipality (Grahamstown), Eastern Cape Province.

To date, to the best of our knowledge, all reported cases have resolved spontaneously. Enteroviral meningitis is a mild form of meningitis unrelated to

serious meningitis infections caused by bacterial organisms. Case numbers of enteroviral meningitis usually increase in warmer months. Enteroviruses are transmitted by faeco-oral transmission. Good hygiene may prevent transmission. Health care workers are requested to identify cases and submit specimens to the NICD/NHLS for testing. Please refer to the 'Enteroviral notification for health care workers' on the NICD website ([www.nicd.ac.za](http://www.nicd.ac.za))

**Source:** Centre for Vaccines and Immunology, and Division of Public Health Surveillance and Response, NICD-NHLS; melindas@nicd.ac.za

## 6 BEYOND OUR BORDERS

### 1. Mozambique, Zimbabwe and Malawi: Tropical Cyclone Idai

The cyclone Idai hit the city of Beira in Mozambique and caused flooding in parts of neighbouring Zimbabwe and Malawi. As of 20 March 2019, more than 200 people in Mozambique and 100 people in Zimbabwe had been confirmed dead. Thousands of people remain displaced in the countries. Currently, humanitarian workers from across the globe are on the ground assisting in response measures. Some people remain missing or trapped.

According to the World Health Organization (WHO), the health threat in these situations arise from communicable diseases including malaria, diarrhoea and typhoid fever. These are aggravated by disruption of health and social services. WHO has since sent supplies and human resources to assist in the recovery.

### 2. Afghanistan, Pakistan: Polio

Some countries continue to register cases of polio despite eradication efforts. In 2018, The Global Polio Eradication Initiative reported 138 cases [33 wild poliovirus (WPV) and 105 circulating vaccine derived poliovirus (cVDPV)].

As of 20 March 2019, there were eight cases reported: two WPV cases from Afghanistan, four WPV cases from Pakistan and two cVDPV from Nigeria. Onset of paralysis was on 12 and 20 January 2019, and 7 February 2019, respectively. In the month of March 2019, environmental samples from Afghanistan tested positive for WPV type1 and environmental samples from Nigeria and Niger tested positive for cVDPV type2. Response to the cVDPV polio outbreak in Zambezia, Mozambique, continues despite the catastrophic results of the cyclone in Beira. (Sources: <http://polioeradication.org>, [www.promedmail.org](http://www.promedmail.org))

### 3. Niger: Fake Meningitis Vaccine

On 15 March 2019, the Niger Health Authorities

reported the discovery of a counterfeit meningitis vaccine at one of the pharmacies in the capital, Niamey. The country is in the meningitis belt and experiences outbreaks of the disease. On 5 March 2019, the country embarked on a campaign to vaccinate children against meningitis A; among the activities in the campaign was inspection of vaccine outlets that led to the discovery of the fake drug.

The vaccine is called Mencevax ACWY, is labeled to have been manufactured in December 2016, and is viable until November 2021. The Health Authorities are yet to establish how many children have been vaccinated with this fake vaccine and urge all service providers to be vigilant and report this vaccine.

### 4. Nigeria: Lassa fever

Nigeria continue to fight a Lassa fever outbreak. In the reporting week 11 (11 - 17 March, 2019) 23 new confirmed cases were reported from nine states – Edo (8), Ondo (4), Ebonyi (3), Bauchi (3), Taraba (1), Imo (1), Enugu (1), Benue (1) and Kebbi (1) with four new deaths in Edo (2), Benue (1) and Bauchi (1) States.

From 1 January to 17 March, 2019, a total of 1 801 suspected cases has been reported from states. Of these, 495 were confirmed positive, 15 probable and 1 277 negative (not a case). Since the onset of the 2019 outbreak, there have been 114 deaths in confirmed cases. Case fatality ratio in confirmed cases is 23.0%.

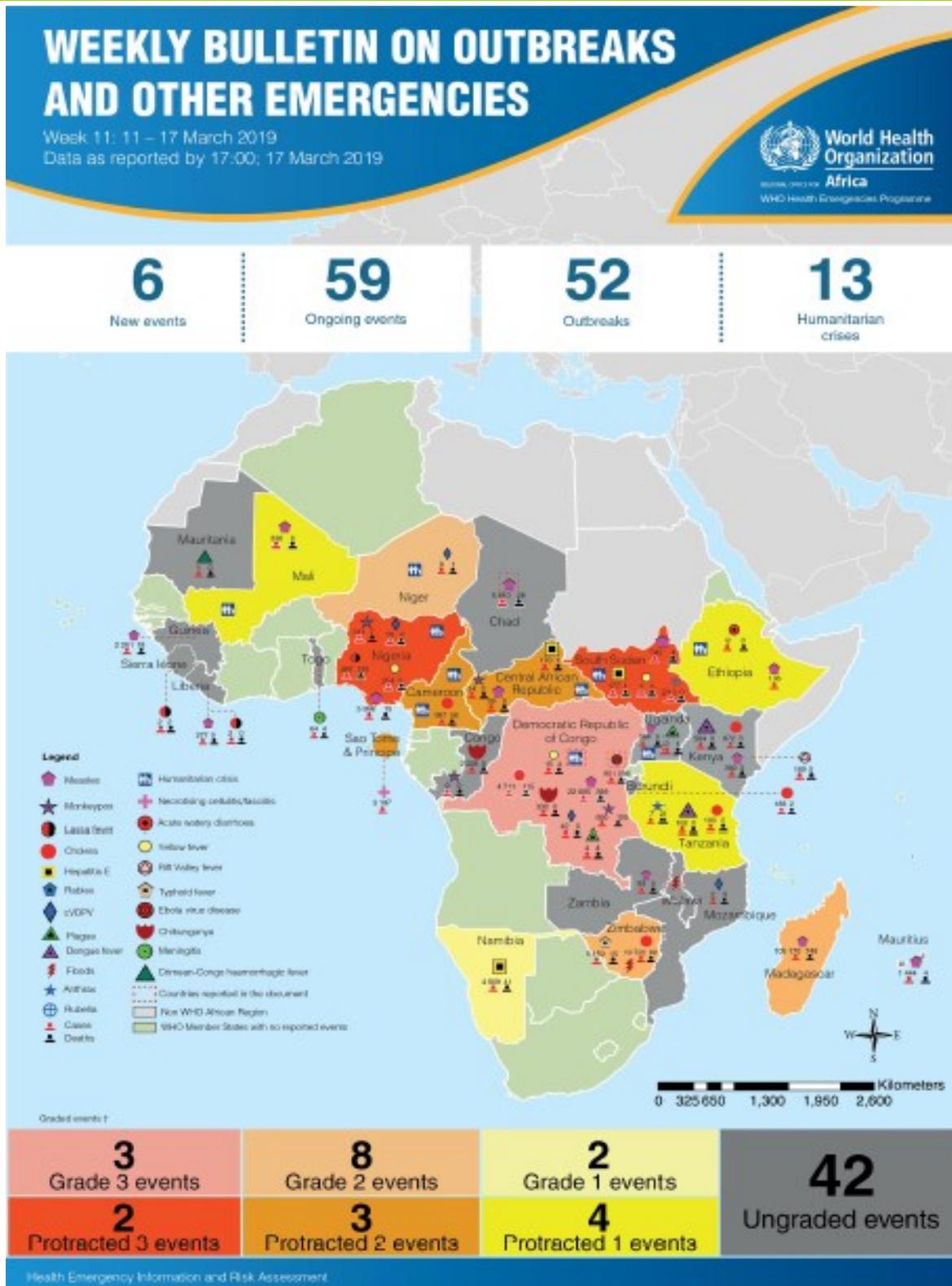
In the reporting week 11, one new healthcare worker was affected in Ebonyi state. A total of 16 healthcare workers has been infected since the onset of the outbreak in seven states – Edo (7), Ondo (3), Ebonyi (2), Enugu (1), Rivers (1), Bauchi (1) and Benue (1) with two deaths in Enugu and Edo States.

**Source:** Promed ([www.promed.org](http://www.promed.org)) and the World Health Organization ([www.who.int](http://www.who.int))

**Figure 5.** 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 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 65 events. For more information see link <https://www.afro.who.int/health-topics/disease-outbreaks/outbreaks-and-other-emergencies-updates>