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1 ZONOTIC AND VECTOR-BORNE DISEASES

a An update on rabies in South Africa

Rabies was confirmed in a three-year-old boy who died in mid-February 2018. The child was exposed to a stray cat on 1 January 2018 at Blythedale Beach, KwaZulu-Natal Province. He sustained a category III exposure for which no medical intervention was sought. The child fell ill at the end of January 2018. Upon admission to hospital early February, he was pyrexial, confused, hallucinating, twitching and vomited coffee-ground substance. The child also became aggressive and reportedly bit and scratched one of his parents and healthcare workers at the hospital. Rabies was considered as part of the differential diagnosis of viral encephalitis but ante-mortem testing (including RT-PCR on saliva, cerebrospinal fluid and nuchal biopsy) were all negative for rabies. Ante-mortem investigations for rabies are often problematic and negative findings do not exclude the diagnosis of rabies. For example, it is required to collect saliva samples at different time points to increase the sensitivity of investigations, as the virus is shed intermittently in the saliva. Post-mortem investigation on a brain sample using the direct fluorescent antibody test, the gold standard for rabies testing, confirmed the clinical diagnosis of rabies. Guidelines for the submission of clinical specimens for rabies investigations in patients suspected to have rabies disease are available from the NICD website: www.nicd.ac.za.

In addition, a probable case of rabies was reported from the Eastern Cape Province. A nine-year-old boy, who was bitten by a cat in January 2018, died in early March 2018 after showing signs and

symptoms compatible with the diagnosis of rabies. The child was from Elliotdale and the exposure occurred at Tafelohashe in the Eastern Cape Province. The history of rabies post-exposure prophylaxis (PEP) is unclear, but it appears that partial PEP was received after the bite occurred. Laboratory confirmation of this case was not possible.

For 2018 to date, a total of three laboratory-confirmed and one probable case of human rabies have been reported. In addition to the confirmed case reported here, the other confirmed cases were reported from the Eastern Cape and KwaZulu-Natal provinces, respectively. Ongoing investigations are also underway for two suspected cases of rabies from KwaZulu-Natal Province. Both patients died with clinical disease compatible with the diagnosis of rabies and had exposures to potentially rabid animals before they developed illness.

Rabies is preventable through PEP after a possible exposure has occurred. For more information on rabies PEP visit www.nicd.ac.za. Dog and cat vaccination campaigns are ongoing in many of the affected areas. Pet owners are urged to ensure that their dogs and cats are vaccinated against rabies.

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

2 VACCINE-PREVENTABLE DISEASES

a Measles outbreak in KwaZulu-Natal Province declared over

The measles outbreak in eThekweni district of KwaZulu-Natal (KZN) Province which started in 2017 was declared over on 20 February 2018. There were 42 cases in eThekweni, with 21 cases detected in six other districts of KZN, giving a total of 63 cases; 62 laboratory-confirmed and one epidemiologically linked (Figure 1). The 5-9 year old age group was most affected (17 cases).

Several communication channels were used to raise awareness of measles among health care personnel and the communities. This resulted in high numbers of suspected measles cases (SMCs) reported to the National Institute for Communicable Diseases (NICD) through routine rash-based surveillance and the notifiable medical conditions (NMC) pathways.

Most cases in KZN occurred in communities with groups of unvaccinated populations. Intensive community engagement activities were carried out by the KZN provincial department of health and the health district teams in collaboration with the Islamic Medical Association. The Western Cape and

Gauteng provinces had measles outbreaks in 2017 with a predominance of cases from similar communities.

Measles vaccines are safe and effective in preventing infection. Administration of measles vaccine in South Africa occurs first at 6 months then at 12 months in the public sector. The target for measles elimination in South Africa is 2020 and this can be achieved by maintaining high vaccination coverage. Health care workers should notify all SMCs and collect a blood sample to be sent for laboratory confirmation. SMCs are patients who presents with a febrile rash and either cough, conjunctivitis or coryza.

Source: Centre for Vaccines and Immunology, NICD-NHLS; melindas@nicd.ac.za

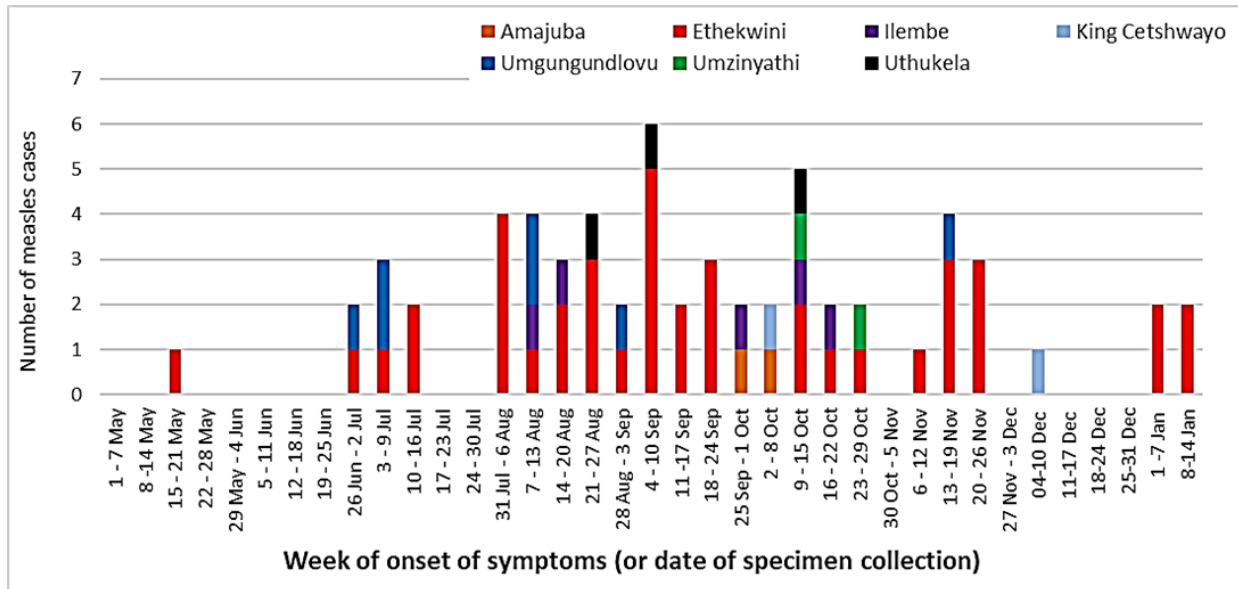


Figure 1. Laboratory-confirmed measles cases per week tested at private laboratories and/or NICD by date of onset of symptoms (or date of specimen collection) in KwaZulu-Natal Province, 1 May 2017 to 14 January 2018 (n=62)

3 SEASONAL DISEASES

a Malaria: Easter travel alert

Malaria transmission is ongoing in South Africa and its neighbouring countries. The number of malaria cases is expected to rise as a result of travel-related exposure during the Easter holidays, and the recent widespread rainfall across parts of southern Africa that favours vector mosquito breeding.

All residents of, and travellers to and from malaria transmission areas (in South Africa this includes the north-eastern parts, especially Mopani and Vhembe districts of Limpopo Province, the lowveld of Mpumalanga Province, including the Kruger National Park and surrounds, and the northern KwaZulu-Natal Province-Mozambique border), should be aware of the risk of malaria.

Travellers to high transmission areas in South Africa, as well as to neighbouring countries particularly Mozambique, are advised to take precautions against being bitten by mosquitoes through the meticulous use of repellents containing DEET, covering bare skin after dark if outdoors, closing insect screens on doors and windows, and using fans or air conditioners, if available. Travellers can also consult their doctors, clinics or pharmacists for anti-malarial chemoprophylaxis. Current recommended chemoprophylactic medications include doxycycline or atovaquone-proguanil, which are available without prescription, but the healthcare worker needs to advise the best option for each individual. It

should be noted that whilst these medications are very good at preventing malaria, they are not 100% effective. All travellers, whether travelling to low- or high-risk areas, are advised to be aware of the malaria symptoms of fever, chills, sweats, headaches, nausea and vomiting, body aches and general malaise; and to report to their nearest health facility or doctor if they suspect that they may have contracted malaria, even if they have used the preventive measures listed above. National guidelines for malaria prevention are available on the NICD website (<http://www.nicd.ac.za/wp-content/uploads/2017/09/Guidelines-South-African-Guidelines-for-the-Prevention-of-Malaria-2017-final.pdf>)

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

b Influenza - preparing for the 2018 season

In Europe, influenza activity remains high in most countries. Although influenza B is the predominant subtype, all seasonal subtypes co-circulate across the region. Influenza-related hospitalisations remained high in England, although influenza illness indicators appeared to have peaked in Ireland and the United Kingdom. Although influenza activity in the USA remains high, activity appears to have peaked. In Canada influenza activity remains high, but the proportion of samples testing positive for influenza has decreased.

In South Africa, influenza remains at inter-seasonal levels, with sporadic detections in travellers. The 2018 Southern Hemisphere influenza vaccine is now available. Influenza vaccine is recommended for

individuals at risk of severe complications of influenza and include pregnant women (including the post-partum period), persons aged <5 years or ≥65 years, and those with chronic medical underlying conditions.

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

4 CURRENT OUTBREAKS

a An update on the outbreak of *Listeria monocytogenes*, South Africa

The source of the *Listeria* outbreak has been identified as ready-to-eat processed meat products manufactured at Enterprise Foods' Polokwane production facility.

The recall of implicated food products was announced on 04 March 2018. However, it is expected that new outbreak-related cases will continue to be reported, for the following reasons:

- the incubation period of listeriosis can be up to 70 days;
- the implicated food products have a long refrigeration shelf life, and it is possible that despite the recall some products were not removed from retail or home settings, and consumption of contaminated food might yet occur;
- the possibility of cross-contamination of other types of foods in the retail or home setting may result in additional cases.

As of 26 March 2018, a total of 982 laboratory-confirmed listeriosis cases has been reported to NICD since 01 January 2017 (Figure 2). Most cases have been reported from Gauteng Province (59%, 576/982) followed by Western Cape (12%, 121/982) and KwaZulu-Natal (7%, 71/982) provinces. Cases have been diagnosed in both public (65%, 634/982) and private (35%, 348/982) healthcare sectors. *Listeria monocytogenes* was most commonly isolated/detected on blood culture (72%, 711/982), followed by CSF (21%, 207/982). Where age was reported (n=943), ages range from birth to 93 years (median 22 years) and 41% (404/982) are neonates aged ≤28 days. Of neonatal cases, 96% (389/404) had early-onset disease (birth to ≤6 days). Females account for 56% (531/950) of cases where gender is reported. Final

outcome data is available for 70% (687/982) of cases, of which 28% (189/687) died. Outcome by age group is shown in Figure 3.

All healthcare workers are requested to complete case investigation forms (CIFs—available on the website) for case-patients with listeriosis, and submit these to the NICD (outbreak@nicd.ac.za). Clinical listeriosis management guidelines are available on the website (www.nicd.ac.za). Where clinicians suspect listeriosis but specimens (including CSF and blood) are culture negative, a polymerase chain reaction (PCR)-based test can be performed at the NICD. PCR can also be performed on placenta samples for investigation of stillbirths/miscarriages. Please contact the Centre for Enteric Diseases on (011) 555 0343 for further details. The NICD continues to operate its 24-hour hotline for healthcare workers.

Caveat: Case data is the best available at time of publication. Due to challenges with NHLS laboratory information system data (since epidemiological week 47) and a possible lag in reporting as a result of the upcoming public holidays, case numbers are likely to change and trends must be interpreted with caution.

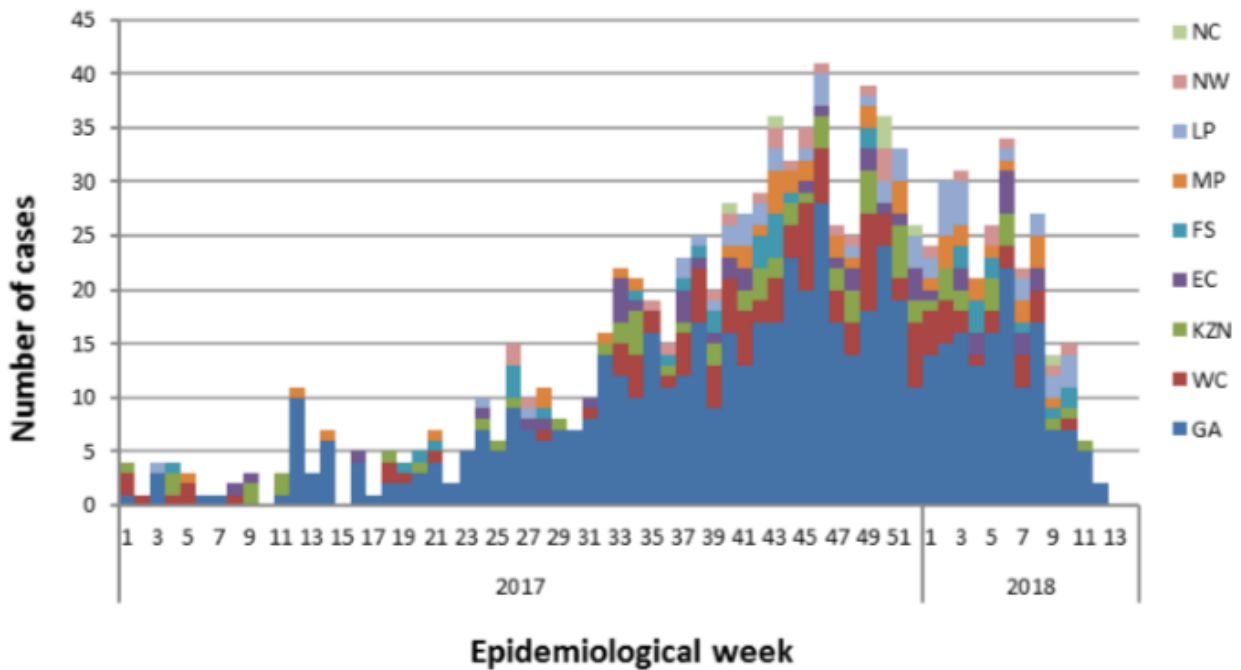


Figure 2. Epidemic curve of laboratory-confirmed listeriosis cases by epidemiological week and date of sample collection and province, South Africa, 01 January to 26 March 2018 (n=982)

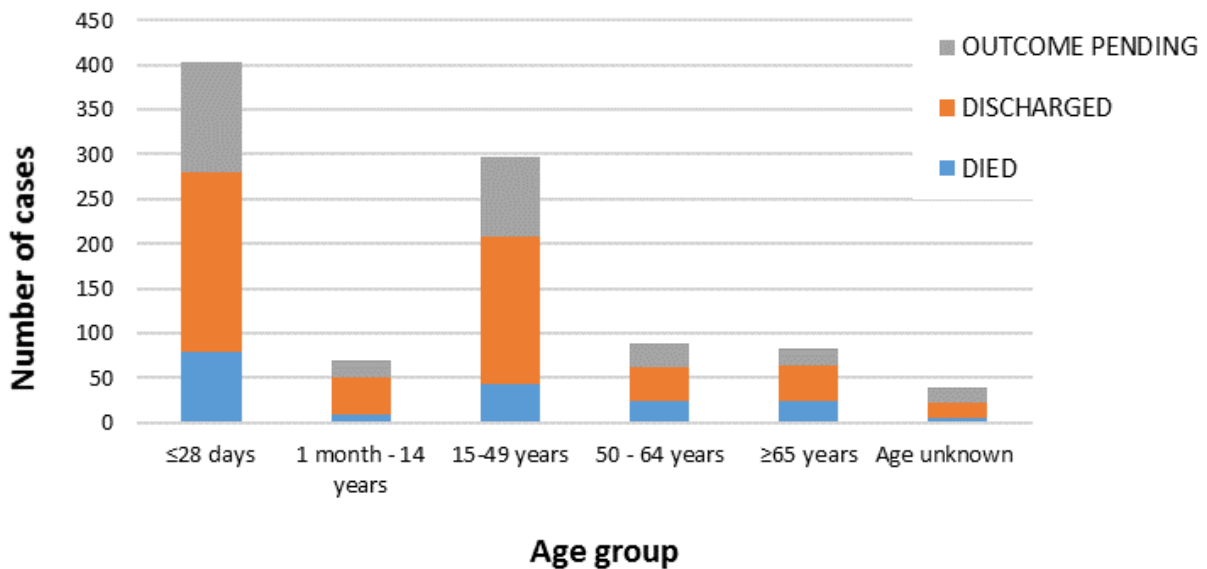


Figure 3. Outcome by age category of laboratory-confirmed listeriosis cases South Africa, 01 January 2017 to 26 March 2018 (where age is known, n=943).

Source: Centre for Enteric Diseases, and Division of Public Health Surveillance and Response, NICD Provincial Epidemiology Teams; NICD-NHLS; Provincial CDCs; (junot@nicd.ac.za; outbreak@nicd.ac.za)

5 FOOD- AND WATER-BORNE DISEASES

a An update on the cholera case from Umkhanyakude District, KwaZulu-Natal Province

Following the confirmation of cholera in an adult female patient in Umkhanyakude District, KwaZulu-Natal Province in February 2018 (February 2018 Communiqué), several measures to control the disease and prevent further spread were instituted, including:

- Health education/promotion with emphasis on good hygiene practices and the need to purify water from informal sources (rivers, boreholes, streams, dams, wells and tanks etc.);
- Healthcare worker sensitisation, case investigation and active case finding;
- Water quality monitoring – testing of environmental water samples.

To date, no additional cases of cholera have been reported in the area. A definitive source of the patient's infection could not be identified. Heightened surveillance is ongoing. Public health authorities are on high alert to ensure early detection of cases and prevent further transmission since there is always a possibility that infected persons could introduce *Vibrio cholerae* into informal water sources.

Provision of potable water and proper disposal of human waste to avoid contamination of water sources remain crucial measures to reduce cholera

transmission. However, these measures may be difficult to implement or maintain due to unavailability of clean water and/or inadequate sanitation facilities. To reduce the likelihood of further spread the following is advised: where safety of water is not known, water can be made safe for use by boiling and allowing it to cool. Water should then be stored in a suitable, clean container with a lid. Alternatively, mix 1 teaspoon or capful of household bleach with 20-25 litres of water and let it stand for at least 2 hours (preferably overnight). Furthermore, people are advised not to defaecate in or near rivers or other water sources.

Source: Umkhanyakude District Department of Health; National Department of Health; Centre for Enteric Diseases and Division of Public Health Surveillance and Response, NICD-NHLS; (outbreak@nicd.ac.za)

b Hepatitis A cluster in Hessequa Sub-district, Eden District, Western Cape Province

On 21 February 2018, the Hessequa Sub-district in the Western Cape Province reported a suspected outbreak of hepatitis A in the town of Heidelberg. Retrospective review of laboratory-confirmed cases from Heidelberg revealed one case in 2016, 3 cases in 2017, and 17 cases in 2018 (Figure 4). The significant increase in the number of cases prompted further investigations and preventative and control measures.

Between 2 January and 28 February 2018, 17 laboratory-confirmed hepatitis A cases were detected; 14 cases at Heidelberg Clinic, two cases at Riversdal Hospital, and one case at a general practitioner. The majority of cases were males (n=15; 88%), and the ages ranged from 3 to 20 years. Fifty-three percent (53%) of the hepatitis A cases occurred in the 5-10 year age group. Nine of the 17 cases attended the same primary school Heidelberg, the others attended local high schools and crèches in the area. One patient was an employed adult.

The healthcare workers conducted interviews with cases and their care-givers, did contact investigations, and heightened surveillance and reporting of suspected cases in Heidelberg.

An awareness campaign in Heidelberg and surrounding areas/communities, schools and crèches were conducted from 26 February to 22 March 2018 focussing on information on hepatitis, personal hygiene, hand washing and food safety. This awareness reached 6 463 learners. The water, food safety, sanitation and hygiene conditions in the Heidelberg community, schools and crèches are being assessed.

Further investigations and response activities are ongoing.

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

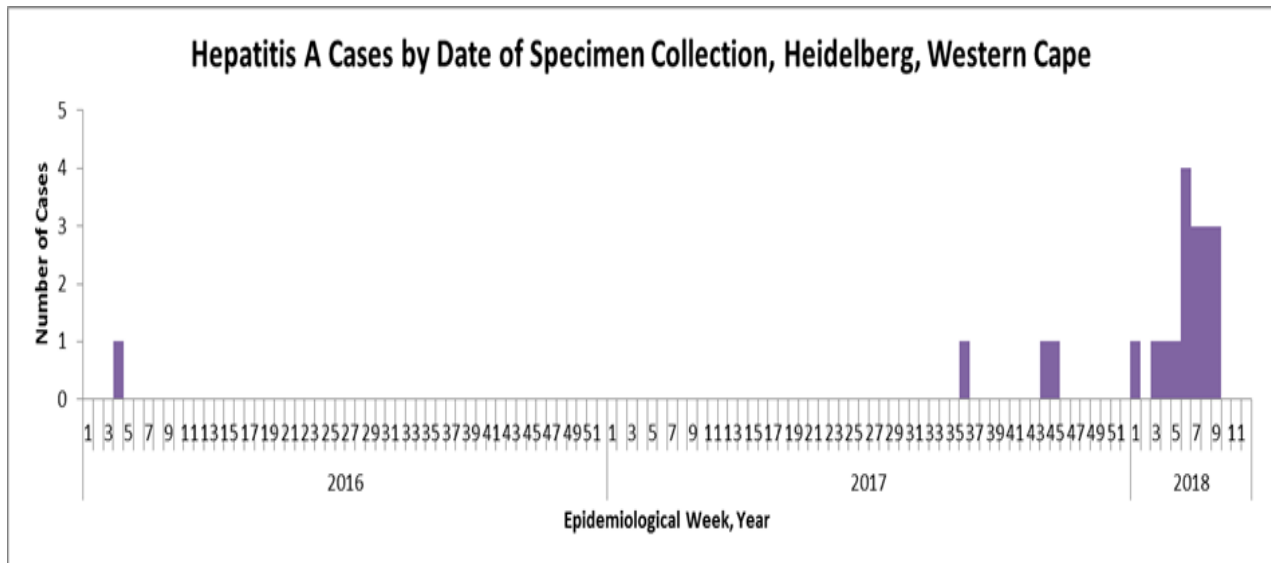


Figure 4. Epidemic curve for Hepatitis A cases in Heidelberg, Hessequa Sub-district, Western Cape, January 2016 – March 2018

6

AN UPDATE ON THE OUTBREAK OF SKIN LESIONS AMONG MINE WORKERS AT A GOLD MINE IN GAUTENG PROVINCE

a

An outbreak of *Staphylococcus aureus* skin lesions among mine workers at a gold mine in Gauteng Province: an update

NICD was notified of an outbreak of skin lesions among workers employed at a gold mine located south of Krugersdorp in Gauteng province in November 2017 and reported in the December 2017 Communiqué (see www.nicd.ac.za)

We conducted a medical record review on 6 February 2018. A random sample of 50 medical files (primary health care and occupational files for each mine worker) was selected from a study population of 203 workers who attended the on-site mine clinic for treatment of skin lesions from January through to September 2017. Only 47 (94%) medical files were available for review because two workers no longer worked at the mine and one worker was a contractor.

Upon record review, we found that the 47 workers had attended the clinic for treatment of multiple episodes of skin lesions (data were collected on all episodes from 14 January 2011 to 15 January 2018). Mine workers had a median of two episodes each (IQR, 1-3 episodes). In total, we recorded 130 episodes, of which 27 (21%) and 84 (65%) episodes occurred during 2016 and 2017 respectively. Forty-seven (36%) were first episodes and 83 (64%) were recurrent episodes. The median duration of symptoms before presentation to the clinic was three days (IQR, 2-6 days). Mine workers presented with skin lesions on various areas of their bodies (Table 1). For episodes with a recorded treatment history, 62 (52%) miners were surgically

treated, 101 (83%) were treated with combination oral antibiotics, 48 (40%) received topical antibiotics and 78 (65%) received dressings. For the episodes of skin lesions with a recorded outcome (n=47), 46 (98%) resolved with a median duration of resolution of 12 days (IQR, 9-17 days) (Table 1).

From 17 November 2017 through to 22 February 2018, 25 pus aspirate specimens were received by the NICD for processing. Of these, we cultured *Staphylococcus aureus* from 21 (84%), *Staphylococcus epidermidis* from one and no bacterial growth for three. Of the 21 *S. aureus* isolates, 20 (95%) were PCR-positive for the gene encoding for the Pantone-Valentine leukocidin (PVL). All 21 *S. aureus* isolates were susceptible to cloxacillin. Seventeen (81%) *S. aureus* isolates were susceptible to clindamycin but resistant to penicillin. Three (14%) *S. aureus* isolates were susceptible to both clindamycin and penicillin, while one isolate was resistant to clindamycin and penicillin.

We hypothesise that there has been person-to-person transmission of *S. aureus* among miners working in close confined conditions; strain genotyping data are pending. Fungi were cultured from ten (40%) pus aspirates although none of these were considered clinically significant. All 25 pus aspirates were negative for acid-fast bacilli using the auramine-O stain. Recommendations on antibiotic treatment were provided to the mine clinic based on these data. On 21 February 2018, we also

conducted face-to-face interviews with mine workers to identify possible exposures, an underground visit with environmental sampling and a bio-risk assessment of communal facilities on the surface of the mine (data are being analysed and are not presented here).

Source: Centre for Healthcare-associated infections, Antimicrobial Resistance and Mycoses, NICD-NHLS; (neleshg@nicd.ac.za)

Table 1. Management of skin lesions from 47 mine workers at a gold mine in Gauteng Province, 6 February 2018.

<i>Episode characteristics</i>	Episodes of skin lesions n=130	
	n/N	%
Year		
2011	2/130	2
2012	3/130	2
2013	3/130	2
2014	1/130	0.8
2015	7/130	5
2016	27/130	21
2017	84/130	65
2018	3/130	2
Median duration of symptoms before presentation in days (median, IQR)[§]	3	(2-6)
Recurrence		
Incident skin lesions	47/130	36
Recurrent skin lesions	83/130	64
Site of skin lesions		
Lower limbs	41/130	31
Upper limbs	31/130	24
Hands	24/130	18
Face	16/130	12
Buttocks and perianal	7/130	5
Trunk and back	6/130	5
Groin	2/130	2
Other	2/130	2
Head and neck	1/130	0.8
Treatment		
Incision & drainage	62/119	52
Oral antibiotics [^]	101/122	83
Metronidazole	79/122	65
Amoxicillin/ampicillin	50/122	41
Cloxacillin	46/122	38
Clindamycin	14/122	12
Amoxicillin-clavulanic acid	2/122	2
Doxycycline	2/122	2
Topical antibiotics	48/120	40
Dressings	78/121	65
Other, e.g. specialist referral	1/130	0.7
Resolved[#]	46/47	98
Median duration of episode before resolution in days (median, IQR)*	12	(9-17)

Footnotes:

IQR Interquartile range

[§] Duration of symptoms could only be calculated for 60 episodes; [^] Mine workers often received a combination of antibiotics at the same time;

[#] Resolution of lesions was unknown for 83 episodes; * Duration of episode could only be calculated for 24 episodes

7 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 5 on page 9.

1. Cholera: Mozambique

On 27 October 2017, the Ministry of Health in Mozambique notified WHO of an outbreak of cholera. From 14 August 2017 through 11 February 2018, 1 799 cases and one death (case fatality rate = 0.06%) of cholera were reported from the two provinces of Nampula (1 580 cases) and Cabo Delgado (219 cases). The outbreak started in Memba district in the north-eastern province of Nampula and spread to Erati district by 15 October 2017. By 19 November, the outbreak had spread to Nacaroa and Nampula city. Case incidence peaked in mid-November with 252 cases reported in one week; this peak was followed by a rapid decrease in reported cases. A slow increase in the number of cases reported has been observed since late December 2017. On 5 January 2018, the first cases were reported from Pemba City in Cabo Delgado Province which is north of Nampula. In 2018 so far, the weekly number of cases has fluctuated between 30 and 60 cases.

2. Circulating vaccine-derived poliovirus type 2: Somalia

Circulation of vaccine-derived poliovirus type 2 (cVDPV2) has been confirmed in Somalia. Three cVDPV2s strains were isolated from environmental samples collected on 4 and 11 January 2018, in Banadir Province (Mogadishu). These latest isolates are genetically linked to cVDPV2 strains collected from environmental samples in the same province on 22 October and 2 November 2017. No associated cases of acute flaccid paralysis (AFP) have been detected.

3. Middle East respiratory syndrome coronavirus (MERS-CoV): Oman, Saudi Arabia

On 4 March 2018, the national IRH focal point of Oman reported one new case of Middle East respiratory syndrome coronavirus (MERS-CoV). Prior to this patient, the last laboratory-confirmed case of MERS-CoV from Oman was reported in November 2017. Globally, 2 144 laboratory-confirmed cases of MERS-CoV, including at least 750 related deaths, have been reported to WHO.

4. Circulating vaccine-derived poliovirus: Democratic Republic of Congo

DRC has had cases of vaccine-derived polioviruses (VDPVs) documented since 2004. After an outbreak of 30 circulating VDPV type 2 (cVDPV2) cases during 2011-2012, only five VDPV2 cases were reported during 2013-2016. As of 8 March 2018, 25 VDPV cases were reported in three provinces in DRC.

Source: (www.promed.org) and the World Health Organization (www.who.int)



Figure 5. Current outbreaks that may have implications for travellers. Numbers correspond to text above. The red dot is the approximate location of the outbreak or event.

8 WHO-AFRO: OUTBREAKS AND EMERGENCIES

WEEKLY BULLETIN ON OUTBREAKS AND OTHER EMERGENCIES

Week 12: 17 – 23 March 2018
Data as reported by 17:00; 23 March 2018

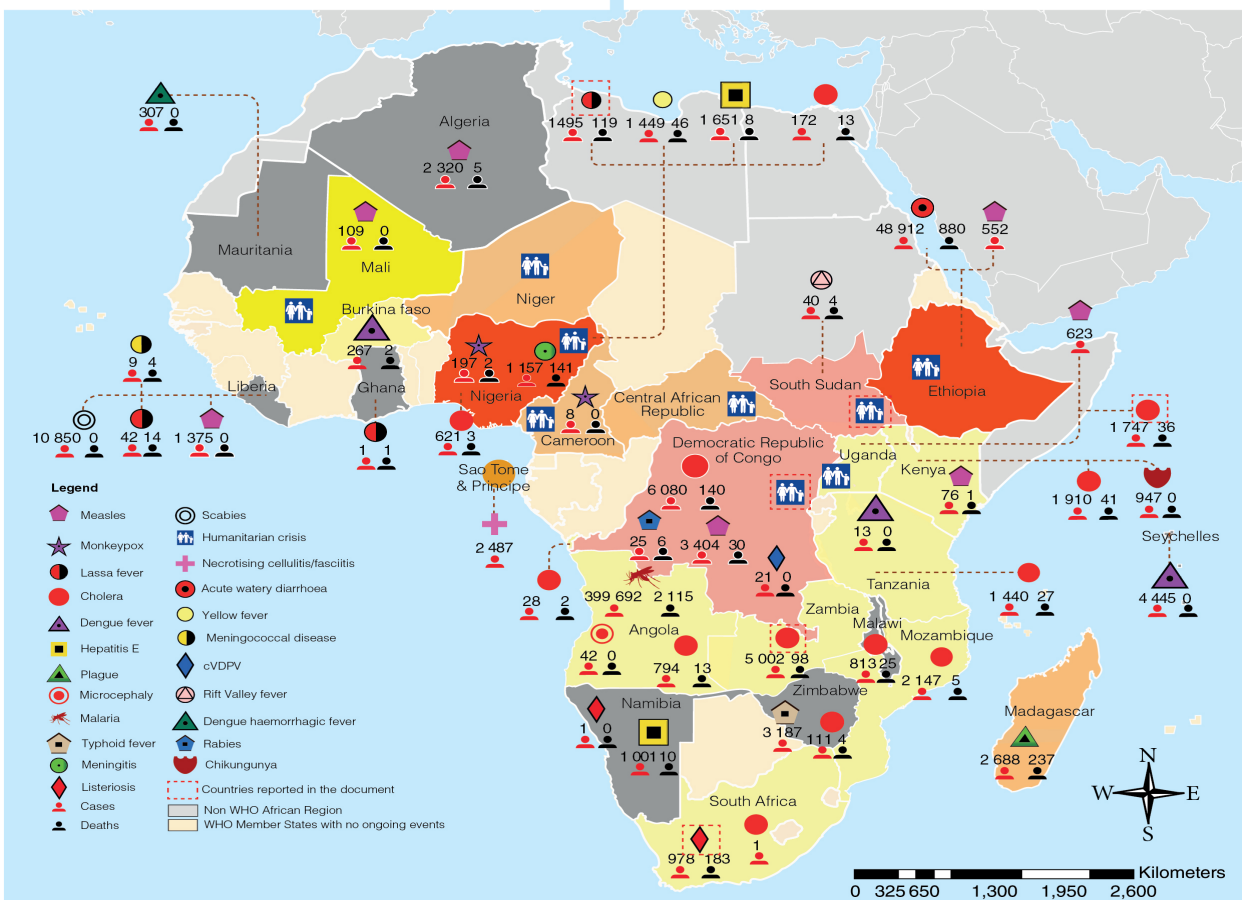


2
New events

50
Ongoing events

43
Outbreaks

9
Humanitarian crises



2 Grade 3 events	5 Grade 2 events	8 Grade 1 events	33 Ungraded events
2 Protracted 3 events	1 Protracted 2 event	1 Protracted 1 event	

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 52 events, of which 43 are outbreaks and 9 humanitarian crises. For more information see link: <https://reliefweb.int/sites/reliefweb.int/files/resources/OEW12-172332018.pdf>