NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

Communicable Diseases Communiqué

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1 NEW REGULATIONS PERTAINING TO SURVEILLANCE AND CONTROL OF NOTIFIABLE MEDICAL CONDITIONS

New regulations relating to the surveillance and the control of notifiable medical conditions (NMC) were published on 5 December 2017 in terms of the National Health Act, 2003, (Act no 61 of 2003). The regulations may be obtained on the NDoH and NICD websites.

These regulations immediately replace former regulations. Most importantly:

- Clinicians, diagnostic laboratories and medical schemes are ALL required to report NMC. Medical schemes must report category 1,2 and 3 conditions for which they have received a claim from a health care provider.
- The list of notifiable conditions (Table 1) has been changed, and divided into 4 categories with different reporting requirements (Table 1).

Comprehensive SOPs and guidelines detailing notification procedures may be found on the NICD website, www.nicd.ac.za

Source: Division of Public Health Surveillance and Response, NICD/NHLS; (portiamu@nicd.ac.za)

Table 1. Notifiable Medical Conditions as described in regulations published on 5 December 2017 in terms of the National Health Act, 2003, (Act no 61 of 2003)

Category 1 Notifiable immediately	**Category 2** Notifiable within 7 days	**Category 3** Notifiable within 7 days
Should be notified by the most rapid means available upon clinical or laboratory diagnosis followed by a written or electronic notification to the Department of Health within 24 hours of diagnosis by health care providers, private health laboratories or public health laboratories	Should be notified through a written or electronic notification to the Department of Health within seven days of clinical or laboratory diagnosis by health care providers, private health laboratories or public health laboratories	Should be notified through a written or electronic notification to the Department of Health within 7 days of diagnosis by private or public health laboratories
Acute flaccid paralysis	Agricultural or stock remedy poisoning	Ceftriaxone-resistant gonorrhoea
Acute rheumatic fever	Bilharzia (schistosomiasis)	Endemic arboviral disease (West Nile, sindbis, chikungunya)
Anthrax	Brucellosis	
Botulism	Congenital rubella syndrome	Non-endemic arboviral diseases (dengue or other)
Cholera	Congenital syphilis	
Diphtheria	Haemophilus influenzae type B	Non-typhoidal salmonellosis
Enteric fever (typhoid)	Hepatitis A	Rubella
Food-borne disease outbreak*	Hepatitis B	Shiga toxin-producing E. coli
Haemolytic uraemic syndrome	Hepatitis C	Shigellosis
Listeriosis	Hepatitis D	
Malaria	Hepatitis E	**Category 4** Notifiable monthly
Measles	Lead poisoning	
Meningococcal Diseases	Legionellosis	
Pertussis	Leprosy	
Plague	Maternal death	Should be notified through written or electronic notification to the Department of Health within 1 month of diagnosis by private and public health laboratories
Poliomyelitis	Mercury poisoning	
Rabies (human)	Tetanus	
Respiratory disease caused by a novel respiratory pathogen**	Soil transmitted helminths including *Ascaris, Trichuris, Ancylostoma, Necator*	
Rift valley fever (human)		Carbapenemase-producing Enterobacteriaceae
Viral haemorrhagic fever***	Tuberculosis (pulmonary	Vancomycin-resistant enterococci *Staphylococcus aureus* hGISA and GISA
Yellow fever	Tuberculosis (extra-pulmonary)	Colistin-resistant *Pseudomonas aeruginosa*
	Tuberculosis- MDR	Colistin-resistant *Acinetobacter baumanii*
	Tuberculosis - XDR	*Clostridium difficile*

*The occurrence of two or more cases of gastro-enteritis or associated symptoms resulting from ingestion of a common food
** Examples of novel respiratory pathogens include novel influenza A virus and MERS coronavirus
*** Viral haemorrhagic fever diseases include Ebola, Marburg, Lassa, Lujo, new world arenaviruses, Crimean-Congo haemorrhagic fever or other newly identified viruses causing haemorrhagic fever.

2 ZOONOTIC AND VECTOR-BORNE DISEASES

a Two new laboratory-confirmed rabies cases in December 2017

Two new cases of human rabies have been confirmed in recent weeks, bringing the number of laboratory-confirmed cases for 2017 to six.

The first recent case involved a 42-year-old male from Mamphakathi Village, Bolobedu (near Tzaneen), Limpopo Province. He was bitten by a stray dog on 10 October 2017. He sustained multiple bites to the back of the neck, right hand and lower leg. It was reported that the patient did not seek post-exposure management after the event. He presented at a local health care facility on 29 November 2017 with vomiting, anorexia, confusion and delirium, and hydrophobia. On admission he was weak and unable to walk. Ante-mortem testing on saliva and cerebrospinal fluid samples yielded positive results for rabies virus nucleic acid. The patient passed away on 3 December 2017. The ante-mortem results were confirmed by rabies fluorescent antibody test on postmortem-collected brain sample at the NICD.

The second recent case was confirmed in a 28-year -old female from Boschfontein, located between the southern region of Kruger National Park and Swaziland in Mpumalanga Province. She was bitten by a dog in September 2017. Her wounds were treated and sutured at a local health care facility, but no rabies post-exposure prophylaxis was provided. She presented with confusion, delirium, agitation and aggressiveness, hydrophobia and hypersalivation to a local health care facility and died on 9 December 2017. Rabies was confirmed at the NICD on postmortem-collected brain sample

Six human cases of rabies have been confirmed in South Africa for 2017 to date. These cases were reported from the Eastern Cape (n=2), KwaZulu-Natal (n=1), Limpopo (n=2, including the case reported here) and Mpumalanga provinces (n=1, the case reported here). For more information please visit www.nicd.ac.za

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

b Plague outbreak in Madagascar — pneumonic plague outbreak is contained

The outbreak of urban pneumonic plague in Madagascar that began in August 2017 has been declared contained by the Madagascar Ministry of Health. Because there is an annual endemic plague season in the country between September and April, reports of sporadic cases of plague (mainly bubonic) can be expected for the next four months. Between 1 August and 26 November 2017, 2 417 confirmed, probable and suspected cases have been reported from 57 of 114 (50%) districts in Madagascar (Figure 1). There have been 209 deaths, with a case fatality rate of 9%. Most cases (1 854, 77%) were clinically classified as pneumonic, 355 (15%) were bubonic, one was septicaemic, and the remainder have not yet been classified. There has been no international spread outside Madagascar, the risk of spread at regional and global level is low, and no travel or trade restrictions have been recommended by the World Health Organization.

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

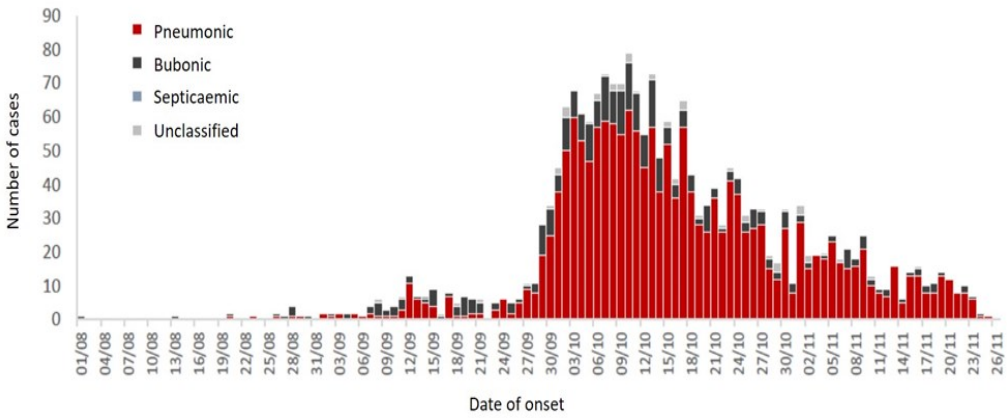


Figure 1. Epidemic curve of plague cases reported in Madagascar, 1 August – 26 November 2017

Source: www.afro.who.int/health-topics/plague/plague-outbreak-situation-reports

c Crimean-Congo haemorrhagic fever in South Africa, 2017

Eight cases of Crimean-Congo haemorrhagic fever (CCHF) were confirmed in South Africa for 2017 to date. These cases originated from the Northern Cape (n=6) and the Free State (n=2) provinces. Seven cases were males aged between 20 and 61 years. A single case was reported in a female patient. Two cases had a fatal outcome. Five cases involved sheep or cattle farmers, one case involved a professional hunter and another case was reported in a person who had slaughtered a cow. Exposure to CCHF virus most often occurs through the bite of an infected *Hyalomma* tick, but humans can be exposed through contact with infected animal blood or tissues. Although CCHF virus is known to infect a range of domestic livestock and wildlife, these do not show overt signs of infection and the viraemic periods are short. For more information on CCHF, visit www.nicd.ac.za

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

3 VACCINE-PREVENTABLE DISEASES

a Update on measles in KwaZulu-Natal Province, South Africa, 2017

All districts in KwaZulu-Natal Province that were affected by the measles outbreak declared in August 2017, have not reported a measles case for the last 42 days, with the exception of Ethekwini District. Targeted measles vaccine campaigns were conducted in all affected districts following declaration of the outbreak. New cases in Ethekwini continue to be reported amongst communities that are vaccine-hesitant with the most recent case being reported on 26 November 2017. Heightened surveillance for measles is ongoing in all districts of KwaZulu-Natal Province over the festive period. Clinicians are encouraged to submit blood for measles serology, and complete a case investigation form (found on NICD website under 'Diseases A-Z') for any person who presents with fever, rash and one of the 3 Cs (cough, coryza and conjunctivitis).

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

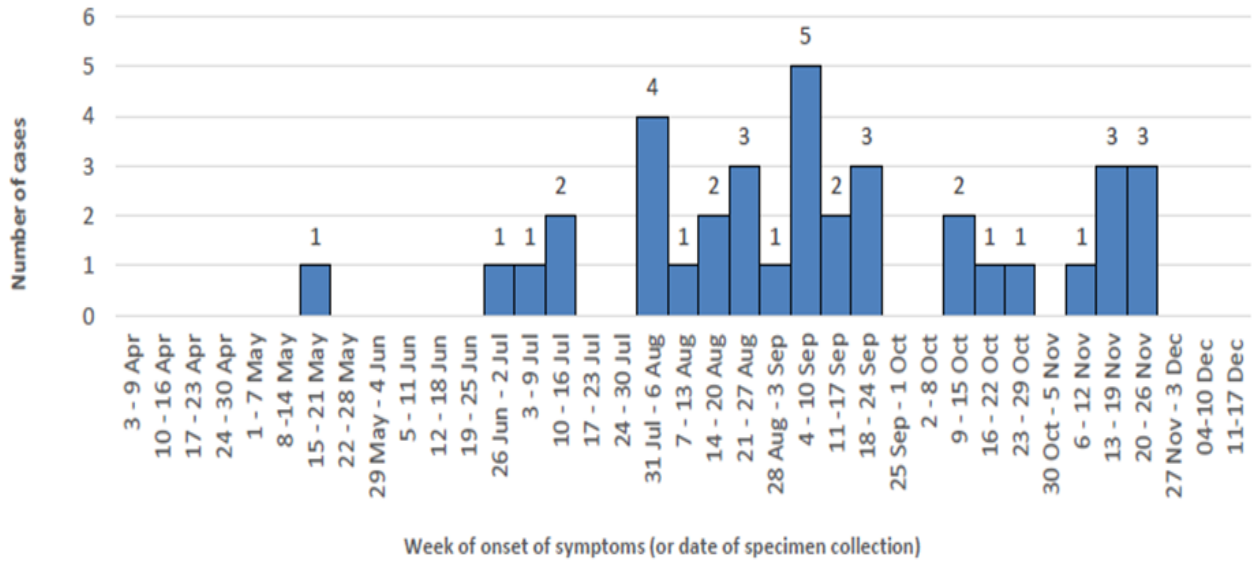


Figure 2. Number of cases of laboratory-confirmed measles by week of symptom onset identified in Ethekwini District as reported to the NICD

4 SEASONAL DISEASES

a The influenza season, 2017 and recommendations for 2018 vaccine

The 2017 influenza season started in week 21 (week ending 4 June), peaked in week 26 (week ending 2 July) and ended in week 41 (week ending 15 October). Thresholds calculated using the Moving Epidemic Method (MEM), a sequential analysis using the R Language, available from: http://CRAN.R-project.org/web/package=mem showed the season to have moderate transmission with low impact.

The majority of detections made during the 2017 season in the three influenza surveillance programmes [influenza-like illness (ILI) at private practices, ILI at primary health care clinics and national syndromic surveillance for pneumonia] carried out by the NICD were influenza A(H3N2) which accounted for 787/1166 (67%), followed by influenza B (312/1166, 27%) which circulated mainly towards the end of the season. Influenza A (H1N1)pdm09 accounted for only 67/1166 (6%) of detections.

The World Health Organization has issued recommendations for the vaccine composition for the 2018 southern hemisphere influenza season. The following strains are recommended for the trivalent vaccine:

- A/Michigan/45/2015 (H1N1)pdm09-like virus;
- A/Singapore/INFIMH-16-0019/2016 (H3N2)-like virus;
- B/Phuket/3073/2013-like virus.

These recommendations include an update in influenza A(H3N2) and influenza B virus components of the trivalent vaccine that was used during the 2017 southern hemisphere season. The B virus component changed from B/ Brisbane/60/2018-like virus (B/Victoria lineage) to a B/Phuket/3073/2013-like virus (B/Yamagata lineage) and the A/Hongkong/4801/2014(H3N2)-like virus was replaced with an A/Singapore/INFIMH -16-0019/2016 (H3N2)-like virus. The vaccine should be available in South Africa from March 2018.

Influenza activity has been increasing in the temperate zone of the northern hemisphere, with detections of predominantly influenza A(H3N2) viruses in North America. In Europe, influenza activity remains low, with detections of predominantly influenza B viruses followed by influenza A(H3N2) viruses. The same vaccine strains that were used for our influenza season in 2017 are recommended for the 2017/2018 northern hemisphere trivalent vaccine.

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

b Malaria—alert for travellers and residents in malaria-endemic areas, December 2017

In keeping with the general increase in malaria incidence in South Africa in 2017 as previously described in the Communique, numbers of malaria cases and deaths (1 414 and 10, respectively) reported in November showed a substantial increase compared with the same period in 2016 (294 cases and two deaths). However, incidence has reduced from the October 2017 period, when 3 488 cases were documented (Figure 3).

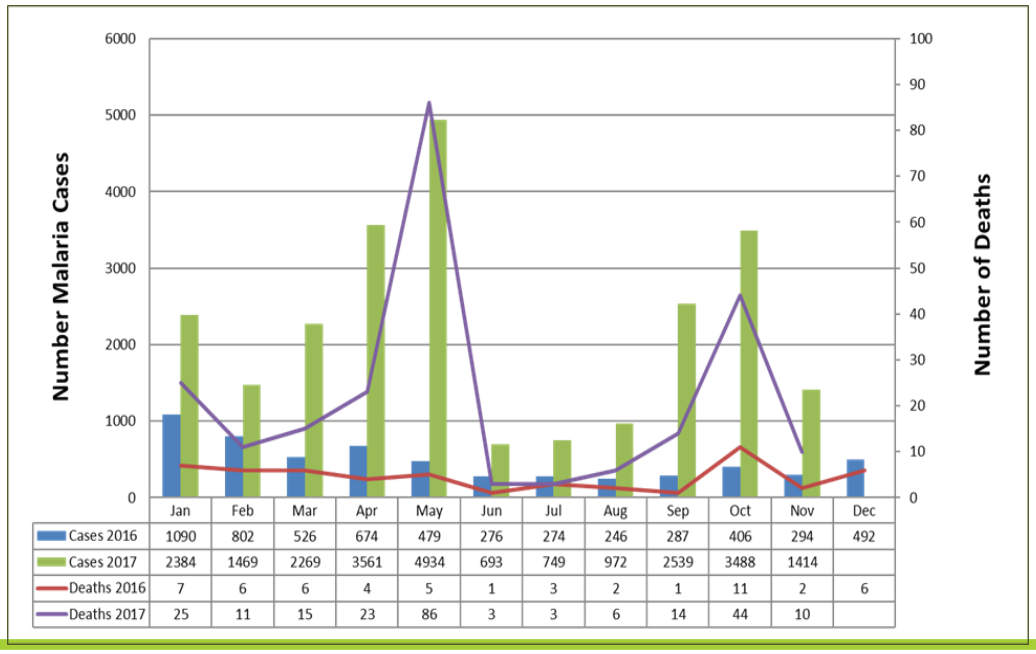
In November, 90% of the malaria cases were in Limpopo and Mpumalanga provinces, which remain the dominant sources of cases. Vhembe and Mopani districts provided the majority (90%) of Limpopo Province's cases, while in Mpumalanga Province, Bushbuckridge, Nkomazi and Mbombela districts provided 94% of the provincial total. In Mpumalanga Province, 62% of cases were classified as locally transmitted, and 38% as imported, mostly from Mozambique.

Malaria case numbers in the third endemic province, KwaZulu-Natal, were low (34, compared with 189 in October, and 30 in November 2016). Provincial malaria control programmes are currently busy with annual indoor residual spraying and other malaria control and surveillance activities.

An above normal to high risk of outbreaks across the malaria transmission areas of the southern African region is forecast, based on local and regional trends and temperature and rainfall patterns. Travellers to malaria risk areas during the holiday season are advised to take necessary precautions against malaria (avoidance of mosquito bites, use

of repellents and appropriate antimalarial drug prophylaxis). Healthcare professionals in both transmission and non-transmission areas should consider the possibility of malaria in any patient with unexplained fever, particularly if there is history of travel, but also remember that infected mosquitoes may travel and transmit malaria in non-endemic places (odyssean malaria; see NICD Communique Vol 16(10), October 2017). Updated guidelines for the prevention and treatment of malaria are available at www.nicd.ac.za.

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



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cases 2016	1090	802	526	674	479	276	274	246	287	406	294	492
Cases 2017	2384	1469	2269	3561	4934	693	749	972	2539	3488	1414	
Deaths 2016	7	6	6	4	5	1	3	2	1	11	2	6
Deaths 2017	25	11	15	23	86	3	3	6	14	44	10	

Figure 3. Malaria cases and deaths, South Africa, 2016 and 2017. Source: Malaria Directorate, National Department of Health

5 CURRENT OUTBREAKS

a *Listeria monocytogenes* outbreak update: ongoing detection of cases

As of 19 December 2017, a total of 647 laboratory-confirmed listeriosis cases has been reported to NICD since 01 January 2017 (Figure 4). Most cases have been reported from Gauteng Province (62%, 399/647) followed by Western Cape (13%, 84/647) and KwaZulu-Natal (7%, 45/647) provinces. Cases have been diagnosed in both public (67%, 435/647) and private (33%, 212/647) healthcare sectors. Diagnosis was based most commonly on the isolation of *Listeria monocytogenes* in blood culture (71%, 459/647), followed by CSF (24%, 156/647). Where age was reported (n=620), ages range from birth to 93 years (median 26 years) and 39% (241/620) are neonates aged ≤28 days. Of neonatal cases, 96% (232/241) had early-onset disease (birth to ≤6 days). Females account for 55% (341/623) of cases where gender is reported. Whole genome sequencing of currently available clinical isolates (including archived isolates from 2015 and 2016), food and food production facility environmental isolates is ongoing. Of the 248 isolates sequenced to date, 201 are clinical isolates received since 01 January 2017. Of these, 85% (170/201) are sequence type 6 (ST6) and are very closely related, representing a single strain of *L. monocytogenes*. This finding supports the current working hypothesis of a single source of food contamination causing the outbreak, i.e. a single widely consumed food product, or multiple food products produced at a single facility.

Listeriosis can be classified into five clinical manifestation categories, with varying incubation periods and clinical presentations, namely, febrile gastroenteritis, pregnancy-associated illness (including neonatal infection), bacteraemia, central nervous system infection and other localised infections. Typically, persons at higher risk for developing invasive listeriosis include pregnant women, neonates ≤28 days of age, persons >65 years of age, and persons with immunosuppression (due to HIV infection, cancer, diabetes, chronic renal disease, chronic liver disease, transplantation and immunosuppressive therapy).

There is no serological test to determine exposure/infection due to *L. monocytogenes* in asymptomatic persons.

A multisectoral outbreak response team with representatives from the National Department of Health (NDoH), the Department of Agriculture, Forestry and Fishery (DAFF), the Department of Trade and Industry (DTI), the NICD and other relevant stakeholders has been tasked by the Minister of Health to coordinate the outbreak response activities. This includes interviewing case-patients to obtain detailed food consumption histories, culture of available food items from affected patients' homes, traceback to source/s of food item/s found to be contaminated, and screening of abattoirs and food processing facilities.

Listeriosis is now a Category 1 Notifiable Medical Condition, and as such requires immediate reporting by the most rapid means available upon diagnosis, followed by a written or electronic notification to the Department of Health within 24 hours of diagnosis by healthcare providers, private health laboratories or public health laboratories.

Clinicians are requested to complete listeriosis case report forms (found on the NICD website at www.nicd.ac.za, Diseases A-Z, under 'Listeriosis') and submit these to outbreak@nicd.ac.za.

Members of the public are advised to practice the WHO '5 keys to safer food' principles, which is available on the NICD website (Diseases A-Z, under 'Listeriosis').

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

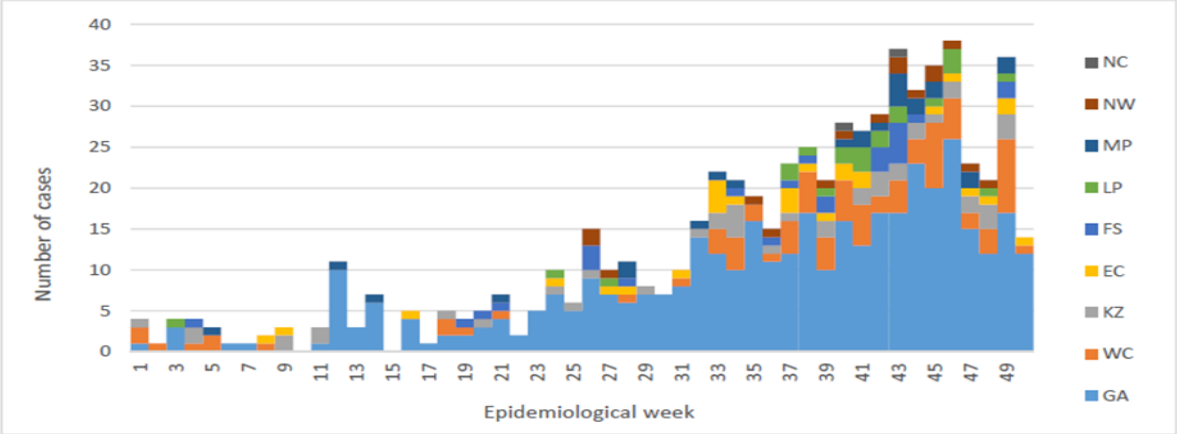


Figure 4. Number of cases of laboratory-confirmed listeriosis by epidemiological week of 2017, indicating the province of diagnosis.

b An outbreak of skin lesions among mine workers at a gold mine in Gauteng

In November 2017, the Centre for Healthcare-Associated Infections, Antimicrobial Resistance and Mycoses (CHARM) at the NICD was notified of an outbreak of skin lesions among mine workers employed at a gold mine in Gauteng Province. CHARM initiated an investigation to determine the extent of the outbreak and to identify possible sources and transmission of infection. This investigation is ongoing and preliminary data are presented here.

A case was defined as an employee of the gold mining company who was seen at the on-site occupational medical clinic with at least one episode of skin lesions. An occupational skin disease (OSD) is a common cause of work-related morbidity and is defined as "any abnormality of the skin induced or aggravated by the work environment". In South Africa, there are a paucity of accurate and reliable data on the impact of OSDs on mine workers.

From January to September 2017, 203 mine workers attended the clinic for treatment of skin lesions (most reportedly with skin abscesses) with no deaths reported. The highest number of cases (n=32) was reported in January 2017 (Figure 5). The median (IQR) age of affected mine workers was 37 years (32-44) and 90% (n=183) were male. Affected mine workers presented with skin lesions on various areas of their bodies, mostly exposed areas. Thirty-four percent (n=69) had skin lesions on their hands, 22% (n=45) on their lower limbs, 10% (n=20) on their feet and 7% (n=15) on their upper limbs. Eighty percent of affected mine workers (n=162) were engaged in underground activities; of these, 33% (n=66) were rock drill operators, 26% (n=53) were involved in stoping (i.e. ore extraction activities) and 21% (n=43) were scraper -winch operators (removal of broken rock by equip-

ment with powered cables). A preliminary review of three patient files showed that affected mine workers were recorded to have superficial abscess-like lesions and were treated with antibiotics (including cloxacillin and clindamycin) and/or had their skin lesions incised and drained.

Following an initial site visit (17 November 2017), clinical personnel at the on-site medical clinic were requested to collect pus aspirates of mine workers presenting with skin lesions and submit these to NICD for diagnostic testing (including bacterial, fungal and mycobacterial tests). Seven pus aspirates have been received to date, of which six were culture-positive for methicillin-susceptible *Staphylococcus aureus*. All six isolates were PCR-positive for the Panton-Valentine leukocidin (*pvl*) gene which encodes a cytotoxin that is associated with skin and soft tissue infections. Fungal and mycobacterial culture results are pending.

We have conducted or planned the following activities to identify possible exposures: abstraction of clinic records for cases, interviews with underground mine workers working in various shifts, collection of clinical and environmental samples for laboratory testing, an underground visit to observe mine workers and a tour of communal facilities on the surface.

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

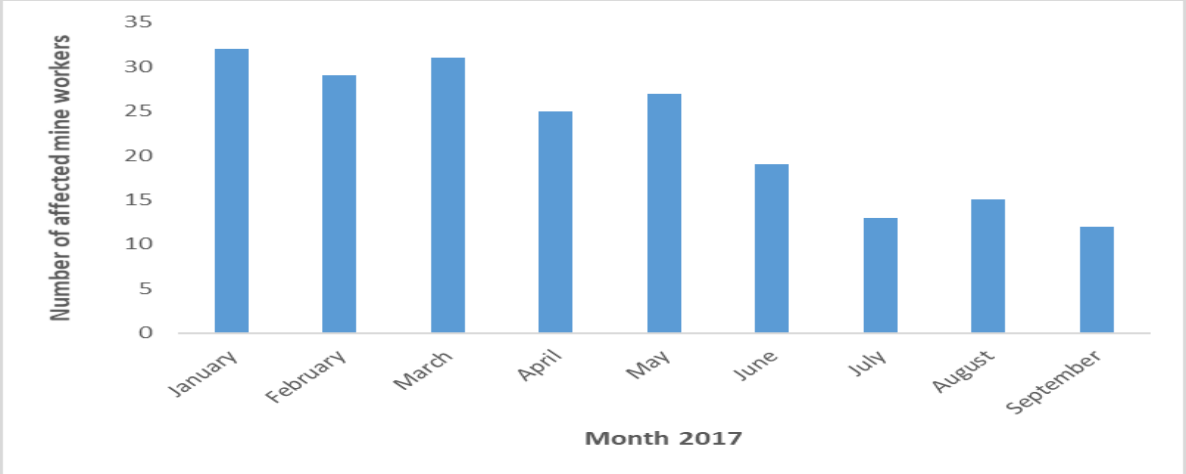


Figure 5. Number of affected mine workers with reported skin lesions at a gold mine in Gauteng province, January through to September 2017, n=203.

6 SURVEILLANCE FOR ANTIMICROBIAL RESISTANCE

a Carbapenemase-resistant Enterobacteriaceae—a monthly update

As discussed in this edition, the Regulations related to the surveillance for notifiable medical conditions (NMCs) included "healthcare-associated infections due to multidrug-resistant organisms of public health importance" as 'Category 4' conditions for notification by public and private laboratories on monthly basis. The infectious organisms that are notifiable are known as the 'ESKAPE' group of organisms and include highly resistant strains of *Enterococcus faecium, Staphylococcus aureus, Klebsiella pneumoniae, Acinetobacter baumannii, Pseudomonas aeruginosa and Enterobacter spp*). Healthcare-associated *Clostridium difficile* infections are added to the list as these are an important cause of morbidity and mortality during hospital admissions.

The inclusion of this important group of infections in the NMC regulations is an important step in increasing health care worker awareness of the importance of combating antimicrobial resistance and healthcare –associated infections. It will also allow baseline trends to be monitored, and outbreaks to be detected.

The objectives of reporting these conditions are to inform infection prevention and control practitioners in hospitals, to alert clinicians of resistance issues, to facilitate policy regarding empirical treatment and to comply to International Health Regulations

(IHR).

The Centre for Healthcare-associated infections, Antimicrobial Resistance and Mycoses (CHARM) at the NICD will be the curator of the antimicrobial surveillance data and reporting. The usual CRE monthly contribution report will be incorporated in NMC report from next year*

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

Table 2. Enterobacteriaceae by carbapenemase type for January-October 2017 and November 2017 at the AMRL-CC, CHARM, NICD.

Organism	OXA-48 & Variants		NDM		VIM		GES	
	Jan-Oct 2017	Nov 2017	Jan-Oct 2017	Nov 2017	Jan-Oct 2017	Nov 2017	Jan-Oct 2017	Nov 2017
Enterobacter aerogenes	5	-	-	-	-	-	-	-
Enterobacter cloacae	72	12	19	3	-	-	-	-
Escherichia coli	25	3	8	4	-	-	1	-
Escherichia hermannii	-	-	-	-	-	-	-	-
Klebsiella oxytoca	9	-	4	1	-	-	-	-
Klebsiella pneumoniae	651	61	143	7	8	2	-	1
Morganella morganii	1	-	4	1	-	-	-	-
Proteus mirabilis	2	-	1		-	-	-	-
Providencia rettgeri	2	-	16	3	-	-	-	-
Serratia marcescens	12	1	3	1	-	-	-	-
Total	**779**	**77**	**55**	**20**	8	**2**	**1**	**1**

OXA: Oxacillinase; **NDM**: New Delhi Metallo-beta-lactamase; **VIM**: Verona integron-encoded metallo-beta-lactamase; **GES**: Guiana-extended-spectrum-beta-lactamase.

b Outbreak of culture-confirmed *Candida auris* bloodstream infection in the neonatal unit of a public-sector hospital, Johannesburg, July to September 2017

Candida auris is an emerging multidrug-resistant fungal (yeast-like) pathogen causing invasive infections and healthcare-associated outbreaks. It is difficult to identify by standard laboratory methods and is resistant to fluconazole in most cases. In South Africa, *C. auris* has a crude in-hospital mortality of 47%. Several outbreaks have occurred in hospitals across South Africa since 2015, but almost exclusively among adult patients.

During September 2017, NICD became aware of a cluster of four cases of *C. auris* candidaemia in the neonatal unit of a public-sector hospital in Gauteng Province. Two additional cases were subsequently detected through the GERMS-SA active laboratory-based surveillance programme. Only one case of candidaemia (*Candida albicans*, June 2016) had been diagnosed in this unit in the preceding 18 months. A case was defined as an infant admitted to the neonatal unit from 27 July to 19 September 2017, with *C. auris* cultured from blood. We collected clinical and laboratory data using a standard medical chart abstraction tool to identify risk factors. Among six cases, five were female. The median birth weight was 1 205 g (IQR, 1 190-1 225) and the median age at diagnosis 23 days (IQR, 19-27). Five cases were born prematurely with hyaline membrane disease. Prior to diagnosis, all cases received blood transfusions and empirical broad-spectrum antibiotics; five received total parenteral nutrition and fluconazole. Five were treated with amphotericin B after diagnosis. Two of six patients died.

A cross-sectional survey was conducted among admitted infants (21 September 2017) to determine the prevalence of colonisation, defined as *C. auris* cultured from an axilla/ groin skin swab without corresponding clinical evidence of candidaemia. Ten of 31 (32%) admitted infants were colonised with *C. auris* in the first survey, two with concurrent *C. auris* candidaemia. After implementing infection prevention and control (IPC) measures, a second survey was conducted (19 October 2017). Only 1 of 26 infants was colonised in the second survey. No further cases have occurred to date.

Suspected neonatal outbreaks of *C. auris* infection should be promptly identified and acted upon. As this pathogen has the propensity to extensively contaminate the healthcare environment around infected/colonised babies and can be transmitted horizontally between patients. NICD recommends the following outbreak response measures: ensure strict adherence to IPC protocols, with emphasis on hand hygiene, isolate or cohort infants known to be infected/colonised with *C. auris,* as far as possible, and ensure thorough environmental cleaning with a hypochlorite disinfectant (at least 1:1000 parts per million). Amphotericin B is recommended as first-line treatment for candidaemia. Screening for colonisation can be considered in an outbreak setting. Information provided by the two colonisation surveys, coupled with intensified IPC measures, were likely important factors in preventing further *C. auris* cases during this outbreak. However, routine screening of patients or healthcare workers is not recommended, owing to limited evidence. Additional information on *C. auris* may be found at www.nicd.ac.za under the 'Diseases A-Z' tab.

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

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 6 on page 11.

1. Diphtheria: Yemen
On 8 November, the World Health Organization (WHO) representative reported a re-emergence of diphtheria in Yemen. Currently 197 cases have been reported from September to November 2017 including 22 deaths. A vaccination campaign targeting 300 000 children younger than 12 months was initiated on 2-3 December 2017. Three million children and young adults in priority districts are due for vaccination in December 2017.

2. Cholera: Yemen
According to the report released by the World Health Organization (WHO) on 29 November 2017, a total of 962 536 suspected cases of cholera has been recorded throughout the impoverished and war-torn Yemen since 27 April 2017 with 2 219 cholera-related deaths.

3. MERS-CoV: Saudi Arabia
From 29 November 2017 until present, the Saudi Arabia MoH reported three new confirmed cases, two newly reported fatalities and four new reported recoveries. As of 11 December 2017, 1 750 laboratory-confirmed cases of MERS-CoV infection have been reported, including 708 deaths [CFR 40.5 %], 1 028 recoveries, and 14 currently active cases/infections since 2012. The WHO advises that surveillance for acute respiratory infections must continue and any unusual patterns be carefully reviewed.

4. H7N9 avian influenza, human cases: China
An additional human case of avian influenza A (H7N9) was recorded between 24 November to 1 December 2017 in Yunnan. This is the first human case reported in the mainland since October 2017. The 64-year-old male patient in Kunming, was known to have contact with dead poultry. It is anticipated that the number of cases of avian influenza H7N9 will increase over the winter season. While local surveillance, prevention and control measures are in place, authorities will remain vigilant and work closely with the World Health Organization and relevant health authorities to monitor the latest developments.

5. Plague in Madagascar
See article on page 3

6. Marburg virus disease: Uganda
On 8 December 2017, the World Health Organization reported that Uganda has successfully controlled an outbreak of Marburg virus disease.

Three people died over the course of the outbreak, which affected two districts in eastern Uganda near the Kenyan border, Kween and Kapchorwa. Health workers followed up 316 close contacts of the patients in Uganda and Kenya to ensure that they had not acquired the illness. The Marburg virus disease outbreak was declared contained after the contacts of the last confirmed patient completed 21 days of follow-up and an additional 21 days of intensive surveillance was completed in affected districts.

7. Cholera in East Africa (Zambia, Tanzania, Kenya)

Cholera has been reported from Zambia (515 cases in Lusaka, 7 December 2017), Tanzania (185 cases in Nyasa District, Rubuma Region), Kenya (116 cases in Mombasa County, 53 cases in Embu County). Heath officials in all countries have responded with various measures to prevent cases and provide safe water.

8. Suspected Zika-associated microcephaly (Angola)

An early report from WHO has indicated that a cluster of cases of microcephaly has been reported from Angola. Officials are investigating to establish if these are associated with Zika virus infection.

9. Dengue fever (Burkina Faso and Senegal)

Cases of dengue fever continue to be reported from Burkina Faso and Senegal. WHO reports indicate that over 13 135 cases year-to-date have been reported from Burkina Faso, while over 760 cases have been reported from Senegal since 28 September.

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

Figure 6. 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

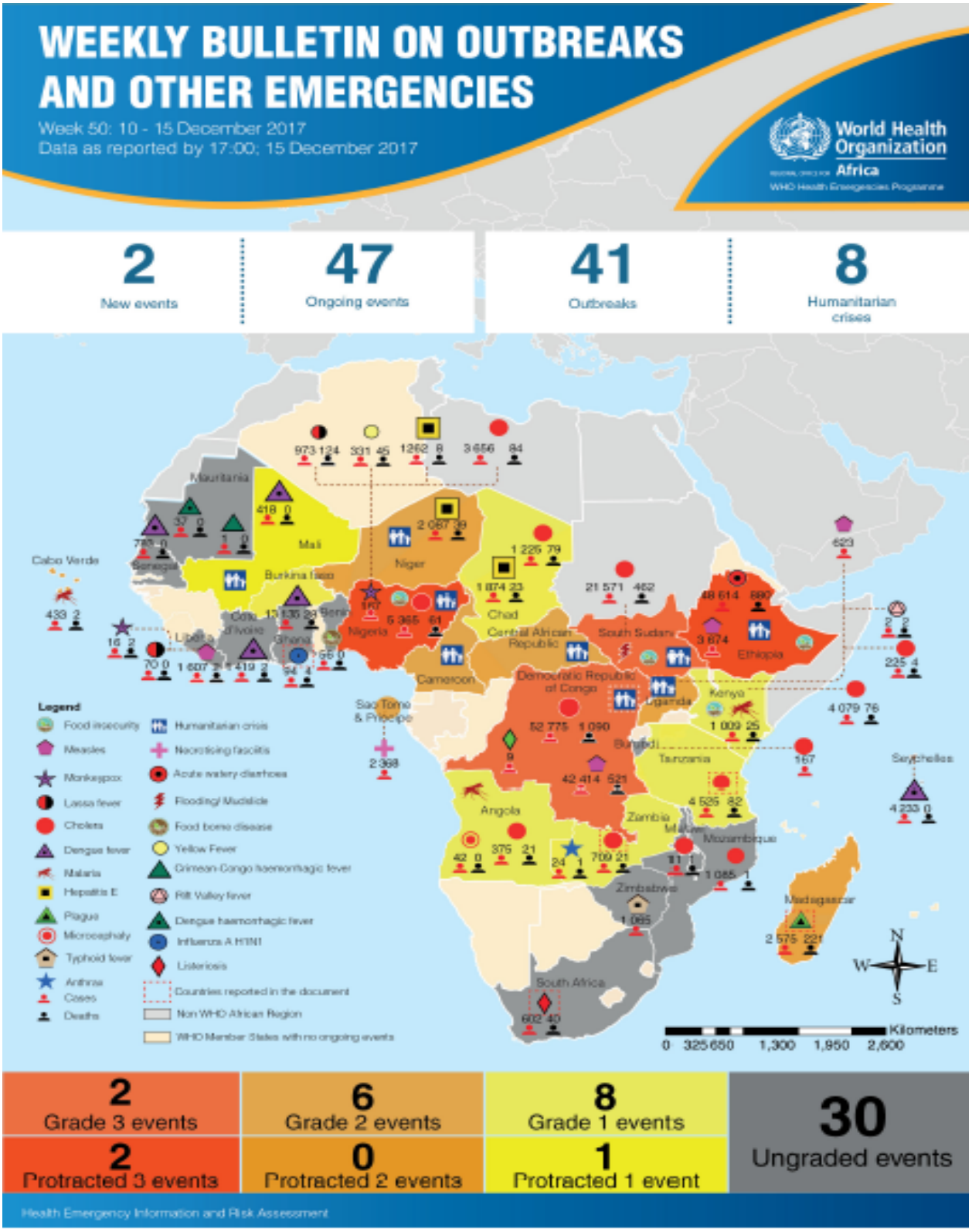


Figure 7. The Weekly WHO Outbreak and Emergencies Bulletin focuses on selected public health emergencies occurring in the WHO African region. The African Region WHO Health Emergencies Programme is currently monitoring 49 events, of which 41 are outbreaks and 8 humanitarian crises. For more information see link: http://apps.who.int/iris/bitstream/10665/259709/1/OEW50-1015122017.pdf