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1 NOTIFIABLE MEDICAL CONDITIONS (NMC)

a Introducing the new Notifiable Medical Conditions reporting system

The National Department of Health (NDOH) has directed the National Institute for Communicable Diseases (NICD) to develop an integrated notifiable medical conditions (NMC) national surveillance system that builds on existing resources to provide a coordinated approach to the collection, collation, analysis, interpretation and dissemination of public and private sector NMCs in South Africa.

Which medical conditions are notifiable?

The list of NMC and case definitions is provided on the NICD webpage (<http://www.nicd.ac.za/index.php/nmc/>). It is a legal requirement to notify all NMC listed in the National Health Act.

How does the NMC system work?

NMCs are notifiable using paper-based reporting (currently operational), a web-based notification portal and a mobile application. The web- and mobile-based notification tools have been piloted and will be officially launched in November 2017 and then systematically rolled out to the provinces.

How do I notify medical conditions?

The NICD has developed a case notification form (<http://www.nicd.ac.za/index.php/nmc/notifiable-medical-conditions-nmc-case-notification-form/>). Completed forms may be submitted to the NICD:

- by email to NMCsurveillanceReport@nicd.ac.za
- By fax to 086 639 1638 or
- by sms/whatsapp to 072 621 3805.

Completed forms should also be submitted to the district communicable diseases co-ordinator (CDC). Comprehensive details are provided in the standard operating procedures (SOP) for paper-based reporting of NMC which is available on the website. A summary guide on how to complete the form is given on the back cover page of the NMC case notification booklet. Instructions detailing how to send the completed form are provided on the inside cover page of the NMC case notification booklet.

Neither the NICD nor provincial authorities are using the old GW17/5 form.

How can I get further assistance?

Please call the NMC helpline on 072 621 3805 or send an email to NMCsurveillanceReport@nicd.ac.za. For clinical and diagnostic enquiries, please call the NICD hotline on 082-883-9920

Source: Division of Public Health, Surveillance and Response, NICD-NHLS; portiam@nicd.ac.za

2 ZOO NOTIC AND VECTOR-BORNE DISEASES

a An update on rabies in South Africa, 2017

Rabies was confirmed a 2-year, 8-month-old child who died on 30 August 2017. The child was bitten on the lip and scratched on the forehead by a relative's dog two weeks before death. The incident occurred in the rural location of Ozwathini Midlands, which is located north-west of Durban. The incubation period of rabies is generally 20-60 days, but shorter incubations have been reported with facial or neck wounds or wounds inflicted to highly enervated areas of the body (such as hands and fingers). The child was not taken to the clinic after the incident, and therefore no post-exposure prophylaxis was administered. Rabies was confirmed by detection of antigen in brain tissue collected post-mortem. A nuchal skin biopsy also tested positive for rabies by reverse-transcriptase PCR.

Three human rabies cases have been reported for South Africa to date including this case. The other two cases were reported from the north-east part of Eastern Cape Province, which remains one of the highest risk areas for rabies currently (Figure 1).

For more information regarding the guidelines for post exposure prophylaxis and diagnosis of rabies in humans, please visit the NICD website, www.nicd.ac.za.

Source: Centre for Emerging, Zoonotic and Parasitic Diseases, NICD/NHLS; (januszp@nicd.ac.za); Charlotte Maxeke Johannesburg Academic Hospital; Allerton Provincial Veterinary Laboratory and Agriculture Research Council — Onderstepoort Veterinary Research

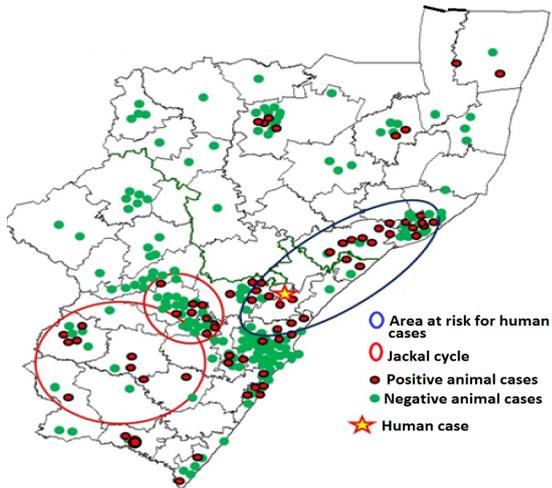


Figure 1 (above). District map of KwaZulu-Natal Province indicating sites of laboratory-confirmed rabies cases amongst dogs (red dots) and rabies-negative cases in dogs (green dots) in September 2017. The place of residence of the case of human rabies reported in this issue is marked by a yellow-red star. (Contribution by Allerton Provincial Veterinary Laboratory).

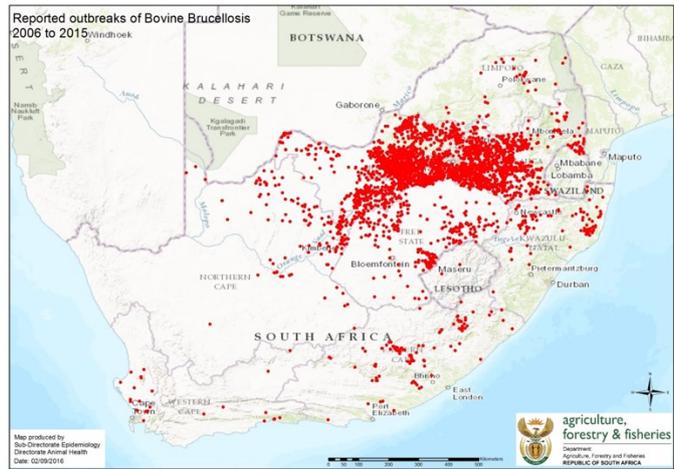


Figure 2 (above). Reported outbreaks of bovine brucellosis (1 dot=1 infected herd) as identified by the Department of Agriculture, Forestry and Fisheries (DAFF) from 2006 to 2015. (Figure courtesy DAFF).

b Veterinary brucellosis cases in South Africa—a reminder to be alert for

The Department of Agriculture, Forestry and Fisheries (DAFF) requested that clinicians be alerted to the extent of bovine brucellosis due to *Brucella abortus* across South Africa, especially in Gauteng, Mpumalanga and North West provinces (Figure 2). Brucellosis may occur in persons who are exposed to infected animals, particularly aborted fetal material of infected cows, and persons who drink unpasteurised milk. After an incubation period of 2–4 weeks (range 5 days to 5 months), persons with brucellosis experience non-specific symptoms including profuse sweating mostly during the night, fever, extreme tiredness, aches in bones and joints, especially the lower back, hip or knee joints. The diagnosis of brucellosis is made through culture,

but rising titres detected through serology may be highly suggestive of the diagnosis.

Brucella melitensis occurs in predominantly in goats, and causes a more severe clinical presentation in humans. However, cases of *B. melitensis* are uncommonly identified, with only one affected herd reported to DAFF from January to June 2017.

Source: Department of Agriculture, Forestry and Fisheries (DAFF); Centre for Emerging Zoonotic and Parasitic Diseases, NICD-NHLS (johnf@nicd.ac.za)

c Update on Crimean-Congo haemorrhagic fever in South Africa

Two unlinked cases of Crimean-Congo haemorrhagic fever (CCHF) were confirmed in mid-September 2017 from the Northern Cape Province.

The first case involved a 58-year-old professional hunter who was in the field days before the onset of symptoms on a farm east of Upington. The patient developed fever and diarrhoea on 14 September and was admitted to hospital three days

after exposures. The patient displayed classic signs of CCHF infection including low platelets (dropping from $74 \times 10^9/L$ to $24 \times 10^9/L$ overnight) and raised liver enzyme levels. The clinical diagnosis of CCHF was confirmed by reverse transcriptase PCR and serology at the NICD.

The second case involved a 32-year-old female from Kuruman who did not report any specific

c Update on Crimean-Congo haemorrhagic fever in South Africa (cont.)

exposures to ticks or blood/tissues of livestock. The clinical diagnosis of CCHF was confirmed by RT-PCR.

Both patients remain isolated and are clinically improving. Their contacts, including health care workers, laboratory staff and family members are being monitored.

A total of seven CCHF cases has been laboratory-

confirmed in South Africa for 2017 to date. These cases were reported from the Northern Cape (n=4), Western Cape (n=1) and the Free State (n=2) provinces. For more information on CCHF, please visit www.nicd.ac.za

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

3 VACCINE-PREVENTABLE DISEASES

a Measles outbreaks and surveillance update in South Africa, January-

A measles outbreak was declared in KwaZulu-Natal Province (KZP) in August 2017 following an increase in measles cases in Ethekwini. To date, 30 laboratory-confirmed cases have been reported, but anecdotally, many cases have occurred without laboratory confirmation or notification. The age range of laboratory-confirmed cases is 6 months to 51 years, with the majority of cases falling in the categories 5-9 years and 10-15 years of age.

Several meetings involving staff at district, provincial and national level have been organised in order to co-ordinate measles surveillance and outbreak response efforts. Targeted immunisation campaigns have commenced at schools in affected areas. Community mobilisation activities are also being carried out in collaboration with local community representatives and the Islamic Medical Association in order to maximise vaccine uptake during immunisation campaigns.

A measles outbreak has also been reported in Ekurhuleni in Gauteng. Earlier in 2017 measles outbreaks occurred in the Cape Winelands District of the Western Cape Province, and in the West Rand District of Gauteng province.

Immunisation with measles vaccine remains the best way to prevent measles infection. Members of the public should ensure that children in their care receive measles vaccine at 6 and 12 months of age.

Health care workers are requested to report all suspected measles cases using the new notifiable medical conditions form to district officials, and to the NICD (see article on page 2).

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

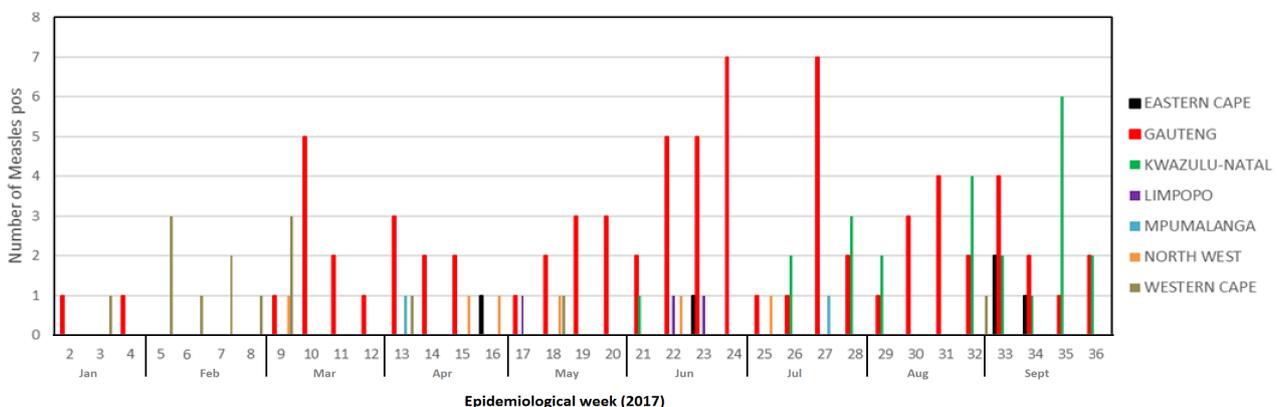


Figure 3. Cases of laboratory-confirmed measles reported to the NICD by province of South Africa, and epidemiological week (approximate correspondence to calendar month is demarcated in the figure).

b No further cases of diphtheria in the Western Cape Province

On 3 August 2017, a diagnosis of diphtheria was confirmed in a 10-year-old child at a provincial hospital in Cape Town. The case presented severely ill with membranous pharyngitis and respiratory obstruction and died in ICU on 4 August. Two siblings and a neighbour of the family were diagnosed with diphtheria, and the mother tested positive for *Corynebacterium diphtheriae* but was asymptomatic. Diphtheria anti-toxin and appropriate antibiotics were administered to the two surviving siblings. No further diphtheria cases have been identified since 14 August.

Western Cape Provincial Health Department provided post-exposure prophylaxis to all affected close and at-risk contacts. In addition, a local vaccination campaign targeting primary school children (with Td booster), and children under 6 years of age (with Hexasim®) was conducted.

Source: Western Cape Department of Health; Division of Public Health, Surveillance and Response, Centre for Respiratory Disease and Meningitis; NICD-NHLS; charlene.jacobs@westerncape.gov.za

4 SEASONAL DISEASES

a The influenza season, 2017

The 2017 influenza season that started in week 21 (week ending 4 June) is continuing to decline. The season peaked in week 26 (week ending 2 July) when 106 specimens were received, with 72 (68%) positive for influenza. During August 2017, an average of 65 specimens was received per week, and the proportion of specimens positive for influenza B has risen from 13% to 72%. A total of 606 influenza detections has been made, the majority of which has been influenza A(H3N2) which was detected in 474 (78%) patients. Influenza A(H1N1)pdm09 has been detected in 38 (6%), and influenza B in 91 (15%) patients. In addition, dual infection of influenza A(H1N1)pdm09 and A(H3N2) was detected in two, and influenza A(H3N2) and B in one patient. Influenza has been detected in all eight provinces with Viral Watch sites.

To date, 18 influenza B viruses were sequenced and haemagglutinin (HA) and neuraminidase genes from 16 viruses were analysed. All 16 influenza B viruses HA sequences grouped with B/Yamagata lineage viruses. The vaccine strain included in the 2017 Southern Hemisphere trivalent influenza vaccine was B/Brisbane/60/2008 (Victoria lineage). In countries with quadrivalent vaccine, B/Phuket/3073/2013 (Yamagata lineage) was included in the vaccine. However, quadrivalent vaccines are not available in South Africa.

In the first three months of the year, influenza A (H3N2) was detected in five patients who had either travelled abroad, or had contact with travellers from the northern hemisphere. Additionally, 75 specimens have been received from patients at a

point of entry into South Africa, (OR Tambo International Airport) and influenza was detected in 36 of these patients.

This season, two deaths in children following confirmed or possible influenza infection were investigated following a report to the NICD:

- Influenza A(H1N1)pdm09 was identified in a 7-year-old child in Gauteng Province who died in hospital following a brief illness.
- Influenza B was identified in a contact of a 15-year-old boy in the Western Cape Province who died following onset of respiratory symptoms. Both the contact and the deceased developed symptoms compatible with influenza simultaneously.

Influenza has been associated with sudden death in young adults and children. However, this is extremely rare. Death following influenza is usually due to cardiac complications such as myocarditis, pericarditis, or cardiac arrhythmias. It is estimated that more than 1 000 children aged less than 5 years die of influenza or influenza-associated illness each year in South Africa. The best way to prevent influenza is through annual influenza vaccination before the start of the season each year.

Although influenza circulation seems to be declining, health practitioners should still consider influenza as part of differential diagnosis in patients presenting with influenza-like illness or admitted

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

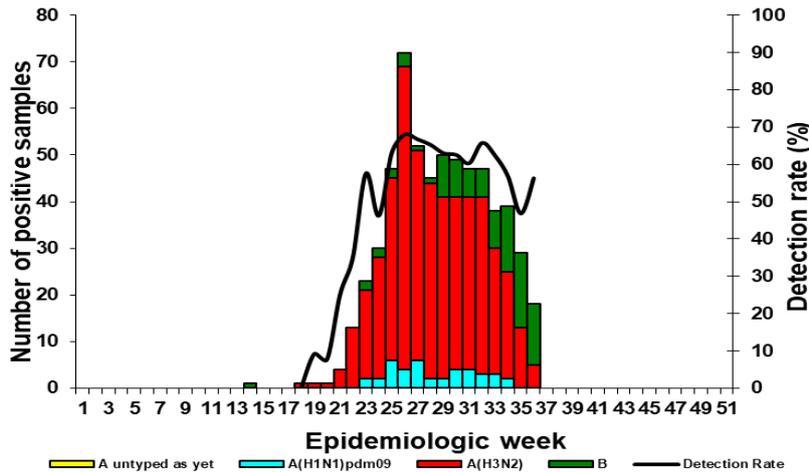


Figure 4. Findings from the influenza surveillance 'Viral Watch' programme indicating the number of positive samples by influenza types and subtypes and detection rate by epidemiological week in 2017 (only reported for weeks with >10 specimens submitted). Patients known to have acquired influenza abroad or from contact with travellers are not included in the epidemiological curve.

b An update on avian influenza in South Africa: no human cases identified

The outbreak of highly pathogenic avian influenza A(H5N8), which emerged in South Africa in June 2017 in poultry and wild birds, is ongoing. As at 8 September 2017, 25 localized outbreaks in poultry and 18 outbreaks in non-poultry (including wild birds) have been reported by the Department of Agriculture, Forestry and Fisheries (DAFF). Five provinces (Mpumalanga, Gauteng, KwaZulu-Natal, Western Cape and North West) have been affected. The OIE reports with maps of areas with reported outbreaks may be found at <http://www.oie.int>.

Following the first reported avian influenza A (H5N8) outbreaks in poultry in South Africa, human surveillance to detect possible human infections was initiated by the National Institute for Communicable Diseases (NICD) in persons exposed to the virus on affected farms. To date, 65 workers

who had been exposed to infected birds have been tested by polymerase chain reaction and none have tested positive for avian influenza A(H5N8). Individuals working in close contact with potentially infected birds and presenting with influenza-like illness (cough, fever, sore throat, runny nose, conjunctivitis or difficulty breathing) are encouraged to consult a health care provider and to inform the health provider of the potential exposure to infected birds. Control measures, including the humane culling of infected and potentially infected poultry, are implemented in affected farms. Poultry and poultry products that are available for sale in retail outlets are safe for human consumption. Additional information can be accessed at www.nicd.ac.za

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

c Early seasonal increase in malaria, registration of artesunate as Garsun®

The early increase in malaria cases has continued in Limpopo and Mpumalanga Provinces, including cases being reported from the Kruger National Park and some of the surrounding private lodges. The very mild winter conditions experienced in the region has been favourable to ongoing mosquito breeding. The annual indoor residual spraying programme is due to commence shortly and will hopefully result in a decrease in transmission.

Health care workers should have heightened awareness for malaria in any person living in or recently returned from a malaria area and who presents with a fever or 'flu-like illness. This is especially im-

portant given that the influenza season has been prolonged, and that malaria and influenza have overlapping symptoms in the early stages of disease. A number of recent misdiagnoses of malaria as influenza have occurred, leading to delays in diagnosis with serious consequences. Malaria tests should always be done when persons have compatible symptoms and a travel history to a malaria-endemic area. Tests should be repeated if initial results are negative.

The 2017 National Malaria Treatment Guidelines and 2017 Guidelines for the Prevention of Malaria (final draft version) can be accessed on the NICD

C Early seasonal increase in malaria, registration of artesunate as Garsun[®] and updated malaria treatment and prevention guidelines (cont.)

website at <http://www.nicd.ac.za/>.

Artesunate has replaced quinine as the treatment of choice for severe malaria and will be available from October 2017 as the registered product GARSUN[®]. The Section 21 application and reporting is no longer required.

Compared to parenteral quinine, artesunate reduces death from severe malaria by 39% in adults and 24% in children. Its advantages include: 1) rapid antimalarial action with activity against early to late stages of the parasite life cycle, preventing sequestration of parasite-infected red cells, and attendant complications; 2) administration as a slow intravenous injection over several minutes rather than a slow rate-controlled intravenous infusion over 4–6 hours, 3) a favourable safety profile and without causing hypoglycaemia, and 4) not requiring dosage adjustment in renal failure.

Artesunate can be used in all trimesters of preg-

nancy (see malaria guidelines for discussion), and there is no lower age or weight limit. It can also be administered intramuscularly if intravenous administration not possible. The dosage of artesunate is 2.4 mg/kg for patients weighing >20 kg stat, and again at 12 and 24 hours, and then once daily until patients can take oral treatment. For patients weighing <20 kg, the dose is 3 mg/kg stat following the same schedule. Artesunate must be given for at least 24 hours (i.e. 3 doses), and should be followed by a full course of artemether-lumefantrine (Coartem[®]) to avoid recrudescence. Further details on administration can be found at <https://www.mmv.org/access/tool-kits/injectable-artesunate-tool-kit>

Source: Division of Public Health Surveillance and Response, NICD-NHLS (lucilleb@nicd.ac.za); Amayeza Information Centre; Department of Clinical Pharmacology, University of Cape Town

5 ENTERIC DISEASES

a A suspected foodborne illness outbreak at a residential training facility in

In South Africa, foodborne illness outbreaks are notifiable; however, they are generally under reported. On 7 July 2017, Gauteng Department of Health and NICD investigated gastrointestinal illness including symptoms of diarrhoea, vomiting, and abdominal cramps amongst 687 delegates at a business training centre in Johannesburg. Twelve of the delegates who reported ill were admitted to hospital between 5 and 7 July 2017.

Stool cultures were taken from patients who were admitted, and results were made available to the investigating team. Environmental investigations were conducted and selected food items were tested. A line list of exposed persons was obtained from the institution. An exposure questionnaire was drawn up using menus provided by the institution. Exposed persons for whom email addresses were available were invited to complete the questionnaire through a link on Google forms. A case-control study design was applied. Bivariate and multivariate analysis was performed on food items that both cases and controls reported consuming.

Stool specimens from eight patients yielded *Salmonella enterica* serovar Enteritidis (*Salmonella* Enteritidis). Molecular studies confirmed these were clonally related. All laboratory-tested foods yielded neg-

ative results. 78/494 (16%) of contactable persons who were exposed responded to the questionnaire, of whom 33 had developed gastro-intestinal illness. The age range of respondents was 21–62 years, with a mean age of 38 years. The majority of patients reported watery diarrhoea (76%), followed by abdominal pain (67%), fever (46%) and vomiting (30%). Multivariate analysis indicated that consumption of scrambled egg on the morning of 5 July 2017 had the strongest association with gastrointestinal disease (OR=5.4, 95% confidence interval 1.8–16, $p<0.05$).

These findings together suggest a foodborne outbreak associated with consumption of food contaminated with *Salmonella* Enteritidis. *Salmonella* Enteritidis is commonly associated with foodborne illness and outbreaks involving the consumption of egg-based foodstuffs and poultry. However, the investigation did not confirm the presence of the organism in the implicated foodstuff, nor were environmental sources and extrinsic contamination adequately ruled out.

Source: Centre for Enteric Diseases, NICD-NHLS; Field Epidemiology Training Programme, NICD-NHLS

b Unprecedented increase of listeriosis, South Africa, 2017

Over the last few months the National Institute for Communicable Diseases (NICD) has received reports of a marked increase in the number of *Listeria monocytogenes* isolations across the country, but particularly in Gauteng Province. The increase has been noted in both public and private sectors. From data available as of 31 August 2017, 190 cases of listeriosis have been confirmed across the country during 2017 with the majority (n=122) being reported from Gauteng (Figure 5). In Gauteng, the population incidence rates have increased from 2 per million to 8 per million, with the highest incidence being recorded in City of Johannesburg at 12 per million (Figure 6). Amongst 122 Gauteng cases, 78 (64%) are paediatric patients of whom 63 are neonates (I.e <28 days old). The ratio of males to females is 1:1.

Since September 2015, the Centre for Enteric Diseases, has received a limited number *L. monocytogenes* isolates from across the country, on which they have conducted molecular typing. Findings show that the majority of isolates submitted to their

laboratory are of a single strain type, which is suggestive of a common source.

Listeriosis is a serious infection usually caused by eating food contaminated with the bacterium *L. monocytogenes*. Foodstuffs most frequently implicated are raw or unpasteurised milk and soft cheeses, vegetables, processed foods, ready-to-eat meats and smoked fish products. *L. monocytogenes* can proliferate in colder temperatures associated with refrigeration (4°C). Pregnant women, neonates, adults aged 65 or older, and people with weakened immune systems are vulnerable to *L. monocytogenes* infection as they have relatively impaired cell-mediated immunity.

An outbreak investigation to determine the source of the outbreak, with particular focus in Gauteng Province, is ongoing.

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

Figure 5 (right). Number of cases of laboratory-confirmed listeriosis by month of the year and by province, generated from NHLS and all private sector laboratories, 1 January 2013 – 31 August 2017

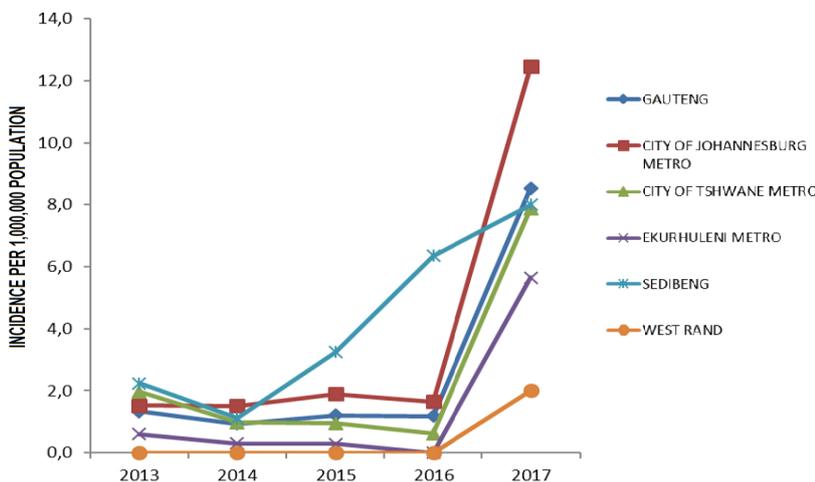
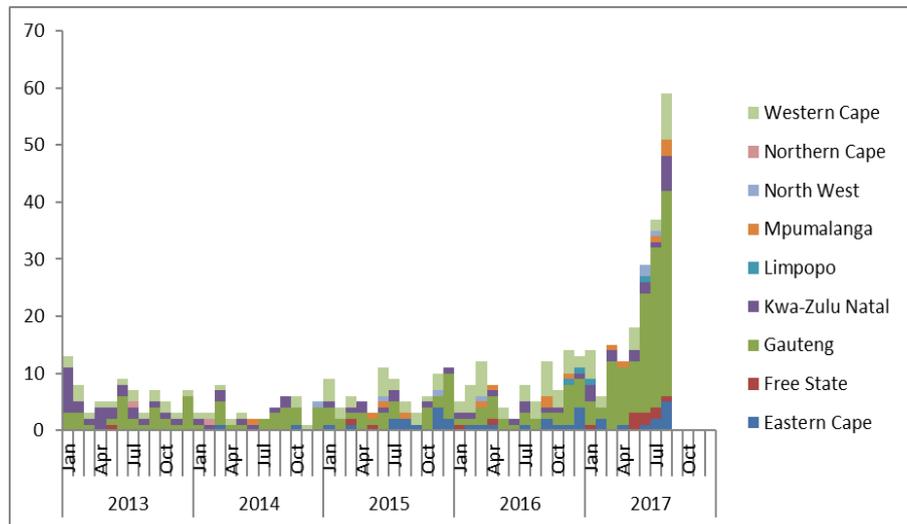


Figure 6 (left). The incidence of listeriosis per million general population in the districts of Gauteng calculated using laboratory-confirmed cases from NHLS and all private sector laboratories, for the period January-August 2013-2017. Population denominators were obtained from StatsSA.

6 SURVEILLANCE FOR ANTIMICROBIAL RESISTANCE

a Carbapenemase-resistant Enterobacteriaceae—a monthly update

The Antimicrobial Resistance Laboratory and Culture Collection (AMRL-CC) of the Centre for Healthcare-associated infections, Antimicrobial Resistance and Mycoses (CHARM) at the NICD has been testing referred isolates of suspected carbapenemase-producing Enterobacteriaceae (CPE) for the presence of selected carbapenemases. CPE have become a threat to healthcare and patient safety worldwide by compromising empiric antibiotic therapeutic choices and increasing morbidity, hospital costs and the risk of death. We are receiving clinically-significant isolates from all specimen types based on antimicrobial susceptibility testing criteria for molecular confirmation. For August 2017, a total of 118 Enterobacteriaceae isolates was received. One-hundred and eleven isolates were screened, 93 of which expressed the carbapenemases that were screened for. Six isolates expressed a combination of two carbapenemases each (n=4, NDM and OXA-48 and variants; n=1, NDM and GES; n=1, NDM and KPC) (Table 2). The majority of the screened isolates were *Klebsiella pneumoniae* (86) followed by *Enterobacter cloacae* (13).

It is important to note that these figures do not

represent the current burden of CPEs in South Africa. However, our data reveal the presence of carbapenemases in Enterobacteriaceae isolates from various specimen types, nationally. As a first step, CPE surveillance is required to determine the extent of the problem in order to restrain the emergence and spread of resistance. The AMRL-CC is currently running a surveillance programme at national sentinel sites for CPE infections in patients with bacteraemia which provides representative data. This significant data will inform public health policy and highlight priorities for action. Controlling the spread and limiting the impact of CPEs in South Africa requires intensive efforts in both the public and private healthcare sectors going forward. NHLS and private laboratories are encouraged to submit suspected CPE isolates based on antimicrobial susceptibility testing (AST) criteria to AMRL-CC, NICD/NHLS. Please telephone (011) 555 0342/44 or email: olgap@nicd.ac.za; for queries or further information.

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

Table 2. Enterobacteriaceae by CPE enzyme type for January-July 2017 and August 2017 at the AMRL-CC, CHARM, NICD.

Organism	OXA-48 & Variants		NDM		GES		KPC	
	Jan-July 2017	Aug 2017	Jan-July 2017	Aug 2017	Jan-July 2017	Aug 2017	Jan-July 2017	Aug 2017
<i>Citrobacter freundii</i>	10	-	7	-	-	-	-	-
<i>Enterobacter aerogenes</i>	5	-	-	-	-	-	-	-
<i>Enterobacter cloacae</i>	58	5	11	2	-	-	2	-
<i>Escherichia coli</i>	23	1	7	1	-	1	-	-
<i>Klebsiella oxytoca</i>	5	2	3	-	-	-	-	-
<i>Klebsiella pneumoniae</i>	423	67	114	14	2	-	-	2
<i>Morganella morganii</i>	1	-	4	-	-	-	-	-
<i>Proteus mirabilis</i>	2	-	-	1	-	-	-	-
<i>Providencia rettgeri</i>	2	-	10	3	-	-	-	-
Total	529	75	156	21	2	1	2	2

NDM: New Delhi metallo-beta-lactamase; **OXA:** Oxacillinase; **GES:** *Guiana*-extended-spectrum; **KPC:** *Klebsiella pneumoniae* carbapenemase

b *Candida auris* outbreak in the neonatal unit of a Johannesburg public-sector hospital

Candida auris is a fungal (yeast-like) pathogen which has caused invasive infections and hospital outbreaks on several continents. The fungus is difficult to identify by standard laboratory methods, is almost uniformly resistant to fluconazole, is associated with a high in-hospital mortality among patients with invasive infection and may be difficult to 'eradicate' from the hospital environment. Large on-going outbreaks have been reported at several Johannesburg and Pretoria hospitals from 2015 onwards, with most cases occurring in private-sector facilities.

In September 2017, NICD became aware of a cluster of four cases of neonatal bloodstream infection caused by *C. auris* at a public-sector hospital in Johannesburg. In addition, a single case of *C. auris* blood stream infection was detected in a second public sector hospital, also in the neonatal ICU. Detection of *C. auris* in a neonatal unit is concerning because of this pathogen's propensity to contaminate the environment around infected/colonised babies and be propagated horizontally in

overcrowded units, if there is insufficient adherence to standard infection prevention and control (IPC) protocols.

NICD recommends that babies with confirmed *C. auris* invasive disease/colonisation be isolated or cohorted. Amphotericin B is recommended as first-line treatment. Units with current outbreaks should ensure strict adherence to IPC protocols. Thorough cleaning of the incubator/cot is warranted when an infected/colonised baby leaves the unit. If an infected/colonised baby is referred to another unit, the receiving team should be notified. Routine screening for colonisation 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 7 on page 13.

1. Hepatitis A: San Diego and Australia

San Diego, USA declared a local health emergency on 1 September 2017 following a hepatitis A outbreak which resulted in 379 cases and 15 deaths. A county-wide vaccination campaign and health promotion exercise emphasising hand-washing has been conducted. An outbreak of hepatitis A in Sydney that affected 12 cases was shown through molecular testing to be related to an ongoing outbreak in Europe that is suspected to be linked to lettuce. There have been more than 1 500 cases of hepatitis A across Europe since June 2016.

2. Cholera: Yemen and Kenya

In the ongoing cholera outbreak in Yemen over 313 538 suspected cases of cholera have been registered with 1 732 deaths (case fatality rate (CFR) 0.6%). Campaigns are underway to improve general hygiene measures and disseminate messages of how to prevent cholera. In Kenya 2 807 cases of cholera including 50 deaths (CFR 1.8%) have been reported as of 14 September 2017. Nairobi County alone has accounted for 59% (1 650) of the national total. The most recent

cluster of cases affected police officers residing at the Multimedia University, Nairobi with over 100 suspected cases reported among the group of 430 officers.

3. MERS-Cov: Saudi Arabia

On 7 September 2017, Saudi Arabia Ministry of Health reported that the number of laboratory-confirmed cases of MERS-Cov infections increased from 1 674 to 1 715 including 690 deaths (CFR 40.3%), 1 003 recoveries, and 22 currently active cases since 2012. Since the last update on 2 September 2017, there have been three newly-confirmed cases, zero newly-reported fatalities and two new recoveries.

4. Lassa fever: Nigeria

Since 1 January 2017, 393 suspected Lassa fever (97 laboratory-confirmed) cases and 58 deaths (CFR, 14.80 %) were reported compared with 787 suspected (75 laboratory-confirmed) cases and 90 deaths (CFR, 11.44 %) during the same period in 2016. Investigation and active case finding are ongoing in affected states with coordination of

response activities by the Nigeria Centre for Disease Control

5. Avian Influenza: China

Following the diagnosis of 4 laboratory-confirmed cases of avian influenza A(H7N9) from Hunan Province and Xinjiang Uyghur Autonomous Region in August and early September 2017, a total of 1 558 laboratory-confirmed human infections with the virus has been reported from China through International Health Regulations notifications since early 2013. The World Health Organization encourages countries to continue strengthening influenza surveillance.

6. Crimean-Congo haemorrhagic fever: Uganda

Eight cases, including two deaths have been reported from Nakaseke and Kiboga districts of Uganda as of 28 August 2017. The last outbreak occurred in August 2013, during which six cases were reported. A multi-disciplinary rapid response team was deployed to the two districts to conduct outbreak investigation and rapid risk assessment.

7. Yellow fever: Brazil and Nigeria

Brazil's Health Ministry has declared an end to a yellow fever outbreak that killed more 250 people over the past nine months. The last case of the mosquito-borne disease was in June 2017. In total, 777 people were infected, of whom 261 died. Vaccination efforts are continuing. In Nigeria, two cases of yellow fever in the Oro Ago area of Kwara State on 12 September 2017 were diagnosed. A localised yellow fever vaccination campaign is planned for 30 September 2017. An additional 38

samples are being tested.

8. Pulmonary plague: Madagascar

As of 14 September 2017, a total of 28 cases of pulmonary infection due to *Yersinia pestis* including five deaths (CFR 17.8%) has been reported since the initial case was detected on 27 August 2017 in Tamatave and Faratsiho in the Vakinankaratra region. Field investigations and contact tracing in all the main affected areas are being conducted.

9. Undiagnosed acute jaundice syndrome: Ethiopia

Cases of acute jaundice syndrome (AJS) have surged in Dollo zone, Somali region, Ethiopia since July 2017. As of 14 September 2017, 194 cases of AJS and five deaths (CFR 2.6%) have been reported. A single sample of 15 tested to date at the National Reference Laboratory has tested positive for hepatitis E virus infection.

10. Malaria: Cyprus

The European Centre for Disease Prevention and Control reported three laboratory-confirmed cases of *Plasmodium vivax* malaria in travellers returning from Esentepe, Kyrenia District in Cyprus. Cyprus has been considered malaria free since 1967. The most recent date of onset of symptoms was on 29 August 2017.

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



Figure 7. 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

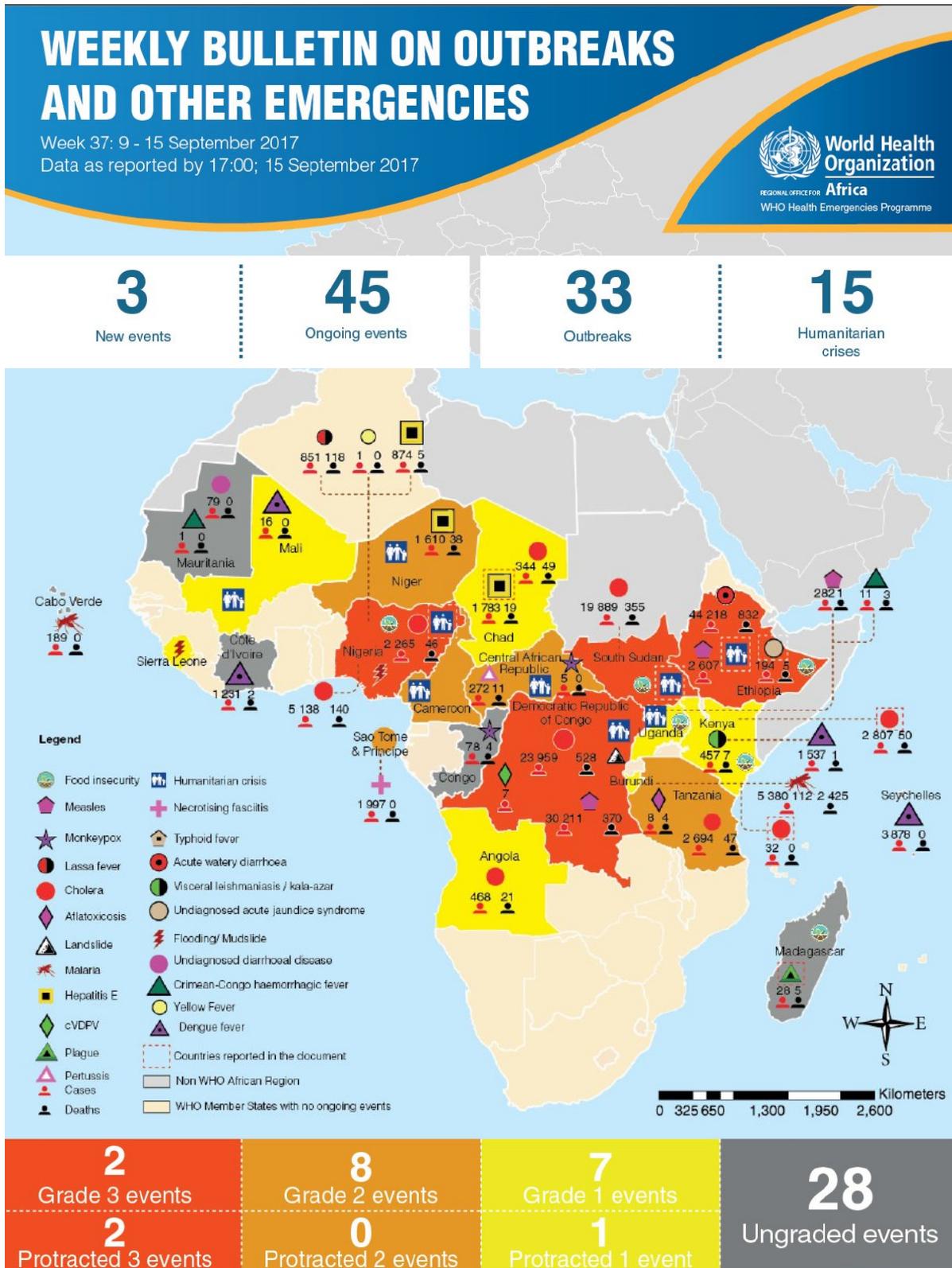


Figure 8. The Weekly WHO Outbreak and Emergencies Bulletin focuses on selected public health emergencies occurring in the WHO African region. The African Region WHO Health Emergencies Programme is currently monitoring 48 events of which 33 are outbreaks and 15 humanitarian crises. For more info see link <http://apps.who.int/iris/bitstream/10665/258961/1/OEW37-91592017.pdf>