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

Communicable Diseases Communiqué

JUNE 2017, Vol. 16(6)

CONTENTS

1 ZOONOTIC AND VECTOR-BORNE DISEASES

a A rabies update for 2017

To date, a single case of human rabies has been confirmed in South Africa for 2017. The case was reported from Libode in the Eastern Cape Province.

In month of June 2017 to date, animal rabies cases were confirmed from Limpopo (Bochum and Polokwane), Northern Cape (Springbok), Mpumalanga (Bushbuckridge and Nkomazi) and the Free State (Thabamofutsanyana) provinces (courtesy ARC-OVR). In addition, during this period, cases of dog rabies were reported from the Amathole, Alfred Nzo, Aberdeen and OR Tambo districts in Eastern Cape and the Ugu, King Cetshwayo and Umgungundlovu districts of KwaZulu-Natal provinces (Data courtesy Allerton Provincial Veterinary Laboratory).

For more information on the prevention of rabies in humans, please visit www.nicd.ac.za

Source: Centre for Emerging, Zoonotic and Parasitic Diseases, NICD-NHLS; Agricultural Research Council-Ondersterpoort Veterinary Research; Allerton Provincial Veterinary Laboratory (januszp@nicd.ac.za)

b Ebola virus disease outbreak in the Democratic Republic of Congo

According to the WHO External Situation Report of 27 June 2017, a total of five cases of Ebola virus disease (EVD) have been laboratory confirmed, with a further three probable cases since late April 2017 in the outbreak of Ebola virus disease (EVD) from the Bas-Uélé Province, Democratic Republic of Congo (DRC). There were four deaths recorded amongst the total confirmed and probable cases. An additional 99 suspected cases were tested but were not classified as cases. No new cases have been reported in the past week. The last confirmed case was diagnosed on 17 May 2017 and tested negative on 21 May 2017.

Cases thus far have been limited to a very remote area, known as Likati Health Zone which is almost impassable by road (Figure 1). The risk of spread of EVD beyond this area and internationally is considered negligible.

Should no further cases be detected, the outbreak will be declared over on 2 July following a 42 day period since the last confirmed case tested negative for the second time.

For further information regarding the outbreak, follow the link: http://www.who.int/emergencies/ebola-DRC-2017/en/

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

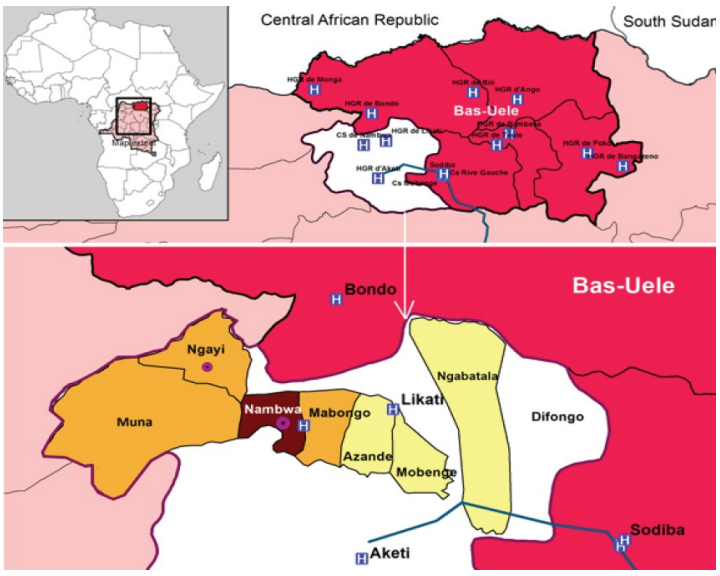


Figure 1.
Geographical distribution of confirmed and probable cases of Ebola virus disease in the Democratic Republic of Congo as of 26 June 2017. Source: WHO external EVD situation report 27 as of 26 June 2017

2 VACCINE-PREVENTABLE DISEASES

a Measles update 2017

As of 15 June 2017, 83 measles cases have been detected in South Africa from January to 15 June 2017, as shown in Figure 2. Measles cases for the year by province are as follows: Gauteng (n=42, outbreak ongoing), Western Cape (n=29, outbreak contained), Eastern Cape (n=2), KwaZulu-Natal (n=1), Limpopo (n=3), Mpumalanga (n=1), North West (n=5). To date, cases predominate in the 0-5 year age group (19 cases) followed by the 15-19 year age group (16 cases) and the 35-39 year age group (10 cases).

During May and June, 15 laboratory-confirmed cases and 65 probable cases have been identified in the West Rand District of Gauteng Province. A local vaccination campaign targeting all ages has been initiated in the community.

A national measles vaccination campaign is ongoing in all provinces of South Africa, targeting children under 5 years of age. Certain districts where older children developed measles (City of Johannesburg and Cape Winelands) vaccinated children under 15 years of age.

Private and public sector clinicians are reminded that all suspected measles cases (fever, rash with one of the three Cs—cough, coryza or conjunctivitis) require a serum sample for laboratory confirmation. The NICD will perform measles IgM testing free of charge in persons meeting the case definition. The case investigation form (available at www.nicd.ac.za under 'Diseases A-Z) should be completed and submitted along with a tube of serum (yellow-topped tube) to the Centre for Vaccines and Immunology, NICD 011-386-6387.

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

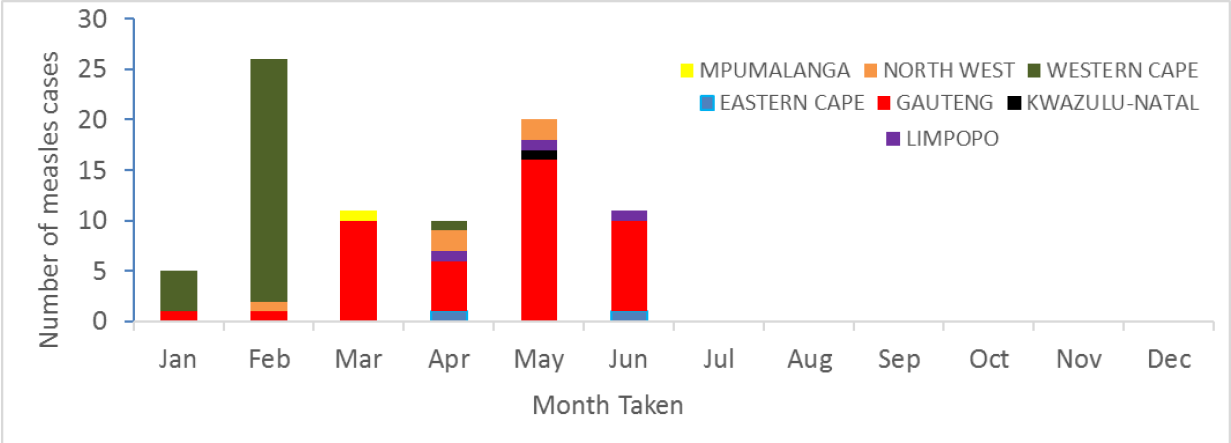


Figure 2. Laboratory-confirmed measles cases in South Africa, 1 January to 15 June 2017

3 SEASONAL DISEASES

a Influenza update 2017

The 2017 influenza season started in week 21 (week ending 4 June). The number of specimens submitted by Viral Watch sites increased from an average of 5 specimens per week during March and April to 37 for the last week of May, to 40 and 65 for the following two weeks. The influenza season is considered to have started when the detection rate of Viral Watch specimens has risen above 10% and remains there for ≥2 weeks. This year the detection rate rose to 25% in week 21, and to 57.5% by week 23 (Figure 3). The average week of onset over the past 33 years has been the last week of May (range last week of April to first week of July).

Since the beginning of May a total of 95 influenza detections has been made, the majority of which has been influenza A(H3N2), which was detected in 85 patients. In addition influenza A(H1N1) pdm09 and influenza B have been detected in five patients each. Influenza has been detected in all

eight provinces with Viral Watch sites.

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, 45 specimens have been received from patients at a point of entry into South Africa, and influenza was detected in 21 of these patients.

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

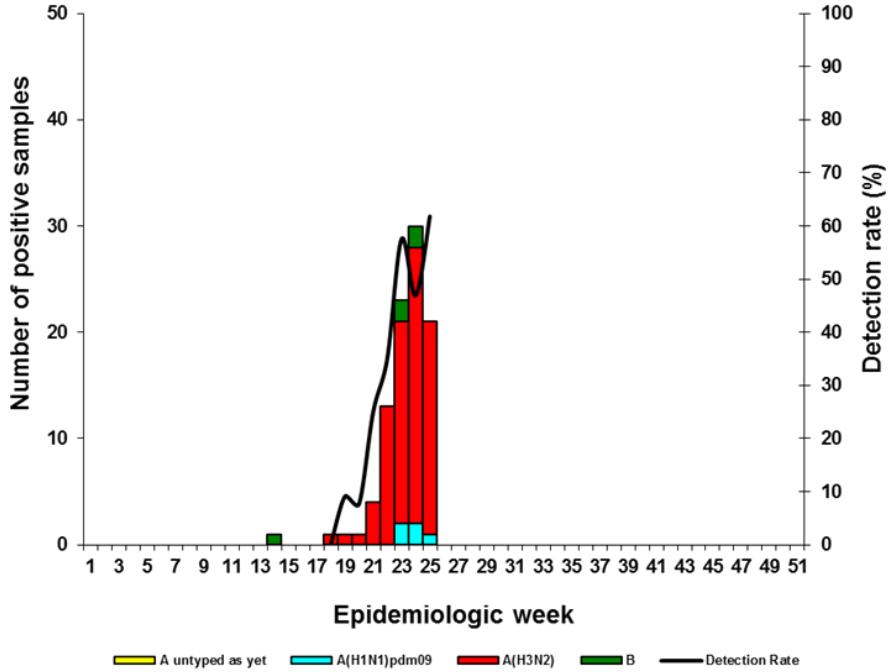


Figure 3. Viral Watch 2017: Number of positive samples by influenza types and subtypes and detection rate* Patients known to have acquired influenza abroad or from contact with travellers are not included in the epidemiological curve.

(*Only reported for weeks with >10 specimens submitted).

b Avian influenza A(H5N8) in Zimbabwe and South Africa

On 17 May 2017 an outbreak of the highly pathogenic avian influenza virus (HPAI), H5N8 was confirmed on a commercial poultry farm in Mashonaland East, Zimbabwe, requiring the slaughter of over 150,000 birds. On 22 June 2017 influenza A (H5N8) was reported from two South African poultry farms in Mpumalanga Province. The South African Department of Agriculture, Forestries and Fisheries (DAFF) and the poultry industry have implemented control measures, including the humane culling of infected and potentially infected birds. There is no record of influenza A(H5N8) causing disease in humans to date. All poultry on the market is absolutely safe to consume, and there is no danger of infection with avian influenza from chicken or egg products.

Highly pathogenic avian influenza A(H5N8) emerged in 2010 in China and caused widespread outbreaks across Europe, East Asia and North America in 2014/15. In 2016/17 influenza A(H5N8) disseminated across Europe, Asia and the Middle East and was detected on the African continent in November 2016 in Tunisia, Egypt and Nigeria, and subsequently in Niger, Uganda, and Democratic Republic of the Congo (Figure 4). Both wild and domesticated birds were identified with influenza A (H5N8).

DAFF has requested all poultry owners who suspect infections in their fowl to contact their local state vet or extension officer, who will visit the farm to collect samples for diagnostic purposes. Diagnostic costs will be covered by DAFF. Should infection be confirmed, DAFF will implement appropriate control measures. Biosecurity measures recommended by DAFF to prevent infection in poultry include housing of birds, preventing exposure to wild birds, limiting access of persons who have been on other poultry farms, and implementation of disinfection measures.

The NICD suggests that persons working in the poultry industry should use personal protective equipment (gloves, disposable overalls, protective eyewear and N95 respirator/mask) when handling potentially infected birds, carcasses or other contaminated material, and when cleaning poultry houses where infected birds have been kept. The NICD recommends follow-up of persons exposed to infected birds for development of symptoms for 7-10 days after exposure Symptomatic persons (with fever, cough, conjunctivitis, runny nose or

sore throat) should be tested for influenza virus infection including H5-specific tests. A nasopharyngeal or oropharyngeal swab should be collected and placed in a viral transport media, and submitted on ice to the NICD. Healthcare workers must make sure appropriate infection control measures for aerosol (airborne) transmission are in place and practiced when managing suspected cases. Additional resources may be found on the NICD website at www.nicd.ac.za

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

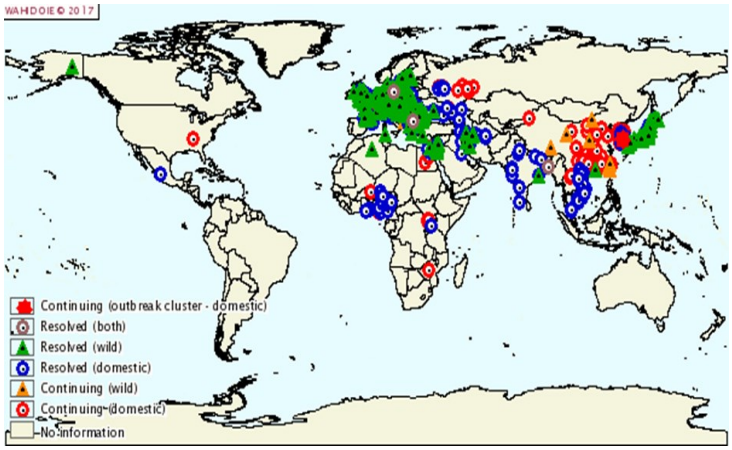


Figure 4. Map showing all highly pathogenic avian influenza virus outbreaks in wild and domesticated birds globally since 1 November 2016 to 20 June 2017 (http://www.oie.int/wahis_2/public/wahid.php/Diseaseinformation/Diseaseoutbreakmaps, accessed 20/06/2017)

c Fatal meningococcal disease in siblings in Tshwane

Meningococcal disease has been confirmed in two fatal cases in siblings from Pretoria who died five days apart. On 22 May, a 6-year-old girl became ill over the course of a day, and was found dead in her bed the next morning reportedly with an extensive 'black' rash. On Saturday 27 May, her 18-year-old brother developed a headache and rash, and died en route to the hospital. These episodes were reported to the NICD hotline by the father's employer on 29 May, after which chemoprophylaxis was given to household contacts and pupils of the school the girl attended. Post-mortem examination of both bodies confirmed *Neisseria meningitidis* serogroup B in cardiac blood, pus swabs of the brain and nasopharyngeal swabs.

Meningococcal disease often presents with non-specific symptoms and can cause rapid deterioration following septicaemia. A non-blanching, purpuric rash often occurs with meningococcal septicaemia. Therefore persons with unexplained sudden death should be investigated for clinical evidence of meningococcal disease, including petechial rash especially on the buttocks, backs of legs or in the conjunctivae. If meningococcal disease is suspected as a cause of sudden death, the case should be notified immediately in order to facilitate provision of chemoprophylaxis to close contacts and avoid secondary cases (Table 1). Limited autopsies can then be requested to confirm the suspicion.

By 4 June 2017 (end of week 22), 33 cases of invasive meningococcal disease for 2017 have been reported to GERMS-SA surveillance programme. A third of these have been reported in the last month, indicating the start of the meningococcal season, which occurs between May and October each year. Clinicians are reminded to notify cases telephonically to the provincial Communicable Disease Control Coordinator (national CDCC 012 395 8096) to ensure appropriate contact tracing and case counting.

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

Table 1. Chemoprophylaxis for close contacts of suspected/confirmed meningococcal cases according to NDOH Meningococcal Disease Guidelines, 2011; www.doh.gov.za; ISBN: 978-1-920031-63-3

ANTIBIOTIC NAME	DOSE IN ADULTS*	DOSE IN CHILDREN	ROUTE	DURATION
Ciprofloxacin	500 mg	10 mg/kg	PO	Single dose
Ceftriaxone	250 mg	125 mg (<12 years)	IM	Single dose
Rifampicin		10 mg/kg bd	PO	2 days

*Close contacts who are pregnant should receive ceftriaxone 250 mg imi.

d Malaria in South Africa 2017: an update

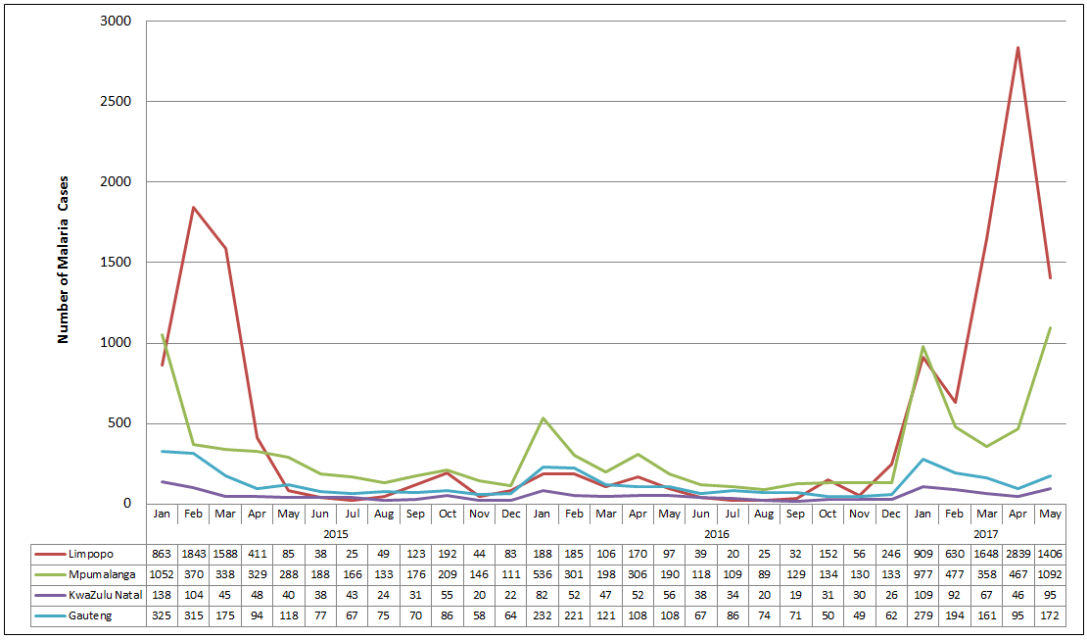
Malaria is seasonal in South Africa (SA) with peaks occurring during the rainy months from September to May. Of the nine provinces in SA, malaria is endemic in only three, namely: Limpopo, Mpumalanga and KwaZulu-Natal. The areas of transmission are the north-eastern parts of Limpopo Province (along the Mozambican and Zimbabwean borders), the Lowveld areas of Mpumalanga Province (including the Kruger National Park but excluding Mbombela/Nelspruit District Municipality and immediate surrounds) and the far northern parts of KwaZulu-Natal Province.

The current 2016/17 malaria season has seen a significant increase in the malaria cases and deaths compared to the 2015/16 season. An upsurge in cases during the period, 23 April to 19 May 2017 in both Limpopo and Mpumalanga provinces coincided with increased travelling during the Easter weekend both within SA and from neighbouring endemic countries (Figure 5). The affected areas were the Greater Giyani (Mopani) and Thulamela (Vhembe) Municipalities in Limpopo Province (LP) and Bushbuckridge and Mbombela sub-districts in Mpumalanga Province (MP). This led to Mpumalanga Province declaring an outbreak in the Bushbuckridge (BBR) area during the second week of May.

The total number of cases in SA during April 2017 was 3 463 compared to 675 in April 2016; while the total number of cases during May 2017 was 2 783 compared to 472 in May 2016. The fewer cases reported in 2016 may be related to drought conditions prevailing in that year. Factors contributing to the upsurge included the rise in ambient temperature, rainfall and humidity reported over the season and a reduction in indoor residual spraying (IRS) in areas where malaria cases had declined in recent seasons. Stock-outs of rapid diagnostic test (RDT) kits and oral antimalarials for uncomplicated malaria resulted in most patients being referred to hospitals, however the supplies were restored in all the facilities.

The cooler temperatures in June marked the end of the malaria season as cases continue to decrease. However, clinicians should still be vigilant for malaria amongst travellers returning from malaria risk areas, especially given the prolonged season and overlap in clinical presentation of influenza virus infection as the flu season has begun. The annual provincial malaria reviews are planned as follows: Limpopo Province: 27 – 29 June 2017 and Mpumalanga Province: 12 – 14 July 2017.

Source: Division of Public Health, Surveillance and Response, NICD-NHLS; Limpopo Province Department of Health; Mpumalanga Provincial Department of Health (lucilleb@nicd.ac.za)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
	2015												2016												2017				
Limpopo	863	1843	1588	411	85	38	25	49	123	192	44	83	188	185	106	170	97	39	20	25	32	152	56	246	909	630	1648	2839	1406
Mpumalanga	1052	370	338	329	288	188	166	133	176	209	146	111	536	301	198	306	190	118	109	89	129	134	130	133	977	477	358	467	1092
KwaZulu Natal	138	104	45	48	40	38	43	24	31	55	20	22	82	52	47	52	56	38	34	20	19	31	30	26	109	92	67	46	95
Gauteng	325	315	175	94	118	77	67	75	70	86	58	64	232	221	121	108	108	67	86	74	71	50	49	62	279	194	161	95	172

Figure 5. Total malaria cases in high reporting provinces of South Africa, 2015/2016 – 2016/2017 Financial years (data courtesy of the National Department of Health)

4 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 receive clinically significant isolates from all specimen types, based on antimicrobial susceptibility testing criteria, for molecular confirmation. For May 2017, 160 Enterobacteriaceae isolates were received. One hundred and forty-two isolates were screened, 105 of which expressed the carbapenemases that were screened for. Three isolates expressed both NDM and OXA-48 and variants (Table 2). Majority of the screened isolates were *Klebsiella pneumoniae* (101) followed by *Enterobacter cloacae* (16).

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 that provides representative data. These 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-April 2017 and May 2017 at the AMRL-CC, CHARM, NICD.

Organism	NDM		OXA-48 & Variants		VIM	
	Jan-Apr 2017	May 2017	Jan-Apr 2017	May 2017	Jan-Apr 2017	May 2017
Citrobacter freundii	3	2	7	2	1	-
Enterobacter aerogenes	-	-	5	-	-	-
Enterobacter asburiae	2	-	-	-	-	-
Enterobacter cloacae	6	1	35	8	-	-
Enterobacter cloacae complex	-	-	-	1	-	-
Enterobacter kobei	-	1	-	-	-	-
Escherichia coli	6	1	18	5	-	-
Klebsiella oxytoca	1	1	2	-	-	-
Klebsiella pneumoniae	75	13	231	69	5	1
Klebsiella pneumoniae subsp *ozaenae*	-	-	1	1	-	-
Klebsiella species	1	-	4	1	-	-
Morganella morganii	2	-	-	-	-	-
Providencia rettgeri	6	1	2	-	-	-
Total	**102**	**20**	**305**	**87**	**6**	**1**

NDM: New Delhi metallo-beta-lactamase; **OXA**: oxacillinase; **VIM**: Verona integron-encoded metallo-beta-lactamase.

5 BEYOND OUR BORDERS

1. Meningococcal meningitis in West Africa

Nigeria: From the beginning of the meningitis outbreak in December 2016, Nigeria has reported a total of 14 513 suspected cases and 1 166 deaths (8% CFR) from 25 states by 8 June 2017. *Neisseria meningitidis* serogroup C remains the predominant (81%) cause of meningitis among those who tested positive.

Niger: An outbreak was officially declared on 29 March 2017. There has been a total of 3 303 suspected cases, with 197 deaths (CFR 6%) reported by 8 June 2017, with the majority of laboratory-confirmed cases being *Neisseria meningitidis* serogroup C.

2. Avian influenza in China

China: the National Health and Family Planning Commission of China (NHFPC) notified WHO of nine additional human cases of Influenza A virus (H7N9 subtype). To date, a total of 1 486 laboratory-confirmed human infections has been reported since 2013.

3. Yellow fever in Brazil

The last case of yellow fever in the outbreak in the southern Brazilian provinces was reported in April 2017. By 31 May, 792 cases have been confirmed, with 519 still under investigation. 274 deaths have been reported with a case fatality rate (CFR) of 34%.

4. Yellow fever vaccination shortage in USA

The USA is experiencing shortages in supplies of YF -VAX, the only licensed YF vaccine (Sanofi Pasteur) for U.S. travellers. Complete depletion of the vaccine is anticipated by mid-July 2017. The manufacturer expects to have product available for shipping by mid-2018. In the interim, unlicensed Stamaril YF Vaccine (Sanofi Pasteur), produced in France with comparable safety and efficacy to YF-VAX and in use in more than 70 countries for decades is being distributed.

5. Polio in Syria

A circulating vaccine-derived polio virus type 2 (cVDPV) has been confirmed in Deir Al Zour Governorates of Syrian Arab Republic. WHO reported 17 laboratory-confirmed cases between 3 March and 23 May 2017, in Deir Al-Zour (16 cases) and Raqqa (1 case) governorates. Polio has not been reported in Syria since January 2014. AFP surveillance has been intensified, additionally; supplementary immunization activities with monovalent oral polio vaccine type 2 are underway.

6. Cholera in Yemen

WHO reports over 200 000 cases of cholera in Yemen, with more than 35,000 confirmed and suspected cases per week. Cases are occurring in 20 of 23 governorates and 86% of all districts in the country. The outbreak is the worst recorded in the world since 2010.

7. **Cholera in Kenya**

Over 40 cases of cholera were reported amongst over 500 delegates attending the 4th Kenya International Lung Health Conference at the Weston Hotel in Nairobi on 22 June 2017.

Source: Division of Public Health Surveillance and Response, NICD-NHLS, from Promed (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

6 WHO-AFRO: OUTBREAKS AND EMERGENCIES

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 40 events, 29 outbreaks and 11 humanitarian crises. *Source: WHO IRIS: Weekly Bulletin on Outbreaks and other Emergencies: week 24: 10 -16 June 2017*

For more info see link below:
http://apps.who.int/iris/bitstream/10665/255720/1/OEW24-101662017.pdf