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

Communicable Diseases Communiqué

OCTOBER 2014, Vol. 13(10)

CONTENTS

1 *INTERNATIONAL OUTBREAKS OF IMPORTANCE TO SOUTH AFRICAN TRAVELLERS AND HEALTHCARE WORKERS*

a Ebola virus disease outbreak: update

Since the last update (access updates on www.nicd.ac.za), additional cases and deaths continued to be reported in all three affected West African countries (Guinea, Liberia and Sierra Leone). Of growing international concern is the possibility of imported EVD cases, given that the outbreak shows no signs of abating, and persistent widespread transmission continues in all three countries.

Situation update: West Africa

As at 22 October 2014, a cumulative total of 10 135 EVD cases (laboratory-confirmed, probable and suspected) including 4 920 deaths with a case fatality rate of 49% has been reported to the World Health Organization for the current EVD outbreak in West Africa (Table 1). The outbreak shows no signs of abating in the three affected countries.

Situation update: Democratic Republic of Congo (DRC)

The recent outbreak in DRC is unrelated to the current outbreak in West Africa (affecting Sierra Leone, Guinea and Liberia) or the focal outbreak in Nigeria (following an imported case from Liberia). This is the seventh confirmed EVD outbreak in DRC, close to where the virus was first identified in 1976 in Yambuku near the Ebola River.

As at 21 October 2014, a cumulative total of 67 EVD cases (38 confirmed, 28 probable and 1 suspected), including eight healthcare workers, has been reported. In addition, 49 deaths (CFR 73%), including the eight healthcare workers, were also reported.

Table 1. Number of Ebola virus disease cases and deaths in West Africa as at 22 October 2014#

Country	Total cases (laboratory-confirmed, probable and suspected)	Total deaths	Case fatality rate
Guinea*	1 553	926	60%
Liberia*	4 665	2 705	58%
Sierra Leone*	3 896	1 281	33%
Nigeria**	20	8	40%
Senegal**	1	0	0%
Totals	**10 135**	**4 920**	**49%**

#Number of cases and deaths in Liberia, Guinea and Sierra Leone as at 18, 21 and 22 October respectively; *Countries with widespread and intense transmission; ** EVD outbreaks in Senegal and Nigeria declared over on 17 and 19 October 2014 respectively

Situation update: countries reporting imported cases ex-West Africa

To date, four countries have reported imported cases ex-West Africa: Nigeria, Senegal, the United States of America (USA) and Mali (Table 2). The most recent imported cases have been reported on 23 October 2014 from Mali (a two-year-old case-patient who travelled from Guinea to Mali, and was hospitalised in Kayes on 22 October 2014) and the USA (a volunteer healthcare worker who became symptomatic six days after returning from West Africa).

In addition, several international volunteer healthcare workers assisting in the West African EVD outbreak response have been repatriated back to their countries of origin for medical care after developing EVD. Three countries have reported autochthonous cases of EVD (through human-to-human transmission) outside of West Africa since the outbreak began:

- Nigeria

Table 2. Imported Ebola virus disease cases ex-West Africa as at 24 October 2014

Country reporting imported case/s	Outbreak status	Number of case/s reported	Date imported case hospitalised	Country where imported case exposed to EVD	Case details
Nigeria	Outbreak declared over on 19 October 2014	1	20 July 2014	Liberia	Liberian national. Exposure to ill persons in Liberia. Symptomatic on arrival to Lagos.
Senegal	Outbreak declared over on 17 October 2014	1	20 August 2014	Guinea	Guinean national. Exposure to ill persons in Guinea. Developed symptoms 3 days after arriving in Senegal.
United States of America	Contact monitoring in progress	2	28 September 2014	Liberia	Liberian national. Exposure to ill persons in Liberia. Developed symptoms 4 days after arriving in USA.
			23 October 2014	Guinea	USA national. Volunteer healthcare worker exposed to ill persons in Guinea. Developed symptoms 6 days after return to USA.
Mali	Contact monitoring in progress	1	22 October 2014	Guinea	Guinean national. Preliminary information: likely exposure to ill persons in Guinea. Developed symptoms approximately 10 days after arriving in Mali.

Following an imported case (a Liberian national who travelled to Lagos on 20 July 2014), local transmission resulted in a focal outbreak amongst healthcare workers and contacts, with 20 EVD cases including 8 deaths in Lagos and Port Harcourt. This outbreak was formally declared over on 19 October 2014.

- Spain

Following the repatriation of a known EVD patient (a Spanish missionary doctor) from Sierra Leone to Madrid on 22 September 2014 for medical care, a healthcare worker who had nursed the patient became infected.

- United States of America

Following an imported case (a Liberian national who travelled to Dallas, Texas on 20 September 2014 and was hospitalised on 28 September 2014) two healthcare workers who had nursed the patient became infected.

Situation in South Africa

Given the frequency of travel between southern and western African countries, there is a risk of EVD cases being imported into South Africa. However the overall risk of Ebola being introduced into the country remains low. Individuals, in particular healthcare workers involved in the outbreak response, may also travel to and present in South Africa for medical care. It is critical to maintain a very high index of suspicion for such cases, and it is extremely important that a detailed history regarding travel and level of contact with suspected/confirmed EVD cases be obtained. However, be mindful that exposure history may not be easily forthcoming; therefore, healthcare workers should always be on alert for any ill person that has travelled to countries with widespread and intense transmission, and ensure that they adhere to appropriate preventive measures. Travel from a country not affected by the outbreak but which has reported imported EVD cases only constitutes a risk when there has been subsequent local transmission of Ebola virus within that country. Even though the risk of importation to South Africa is considered low, surveillance for detection of EVD has been strengthened. This is of utmost importance as early detection of cases will ensure that appropriate prevention and control measures are instituted timeously to prevent further spread.

As at 24 October 2014 there have been no cases of EVD in South Africa associated with the current outbreaks in West Africa and DRC. There are no suspected cases of EVD in South Africa at present.
The case definition for a suspected EVD case is as follows:
Any person* presenting with an acute onset of fever (≥38°C) plus any of the following additional symptoms: severe headache, muscle pain, vomiting, diarrhoea, abdominal pain, or unexplained haemorrhage who has:

- ◊ Visited or been resident in Guinea, Liberia, Sierra Leone, Democratic Republic of Congo or another country reporting imported cases with local transmission**, in the 21 days prior to onset of illness

AND

- ◊ Had direct contact with or cared for suspected/ confirmed EVD cases in the 21 days prior to onset of illness

*Healthcare workers in particular are at high risk

**Refer to EVD situation reports posted on the NICD website (www.nicd.ac.za) for updated information on countries reporting EVD cases

Laboratory testing

Testing for viral haemorrhagic fever viruses (including Ebola virus) in South Africa is only available at the NICD. EVD testing is neither warranted nor useful for persons that are not suffering from a clinical illness compatible with EVD, even in the event of compatible travel histories. The tests cannot be used to determine if the patient has been exposed to the virus and may develop the disease later.

Requests for testing (with a detailed clinical, travel and exposure history) should be directed to the NICD Hotline at 082 883 9920 (a 24-hour service, for healthcare professionals only).

Source: Division of Public Health Surveillance and Response and Centre for Emerging and Zoonotic Diseases, NICD-NHLS

2 ZOONOTIC and VECTOR-BORNE DISEASES

a Crimean-Congo haemorraghic fever

Crimean-Congo haemorrhagic fever (CCHF) has been confirmed in a 44-year-old farmer from Van Wyksvlei, Northern Cape. The patient reported a "bontpoot" tick bite before falling ill in mid-October 2014. The patient was hospitalized shortly after starting to complain of fever and myalgia. Initial blood results revealed platelet depletion ($114X10^9$/L) (18 October 2014) which further

dropped to 92 $X10^9$/L (23 October 2014). Other findings included marginally raised liver transaminases and leukopenia. The diagnosis was confirmed by RT-PCR on two successive submission of blood to the National Institute for Communicable Diseases. The patient is reportedly doing well at the time of this report.

Nearly 200 cases of CCHF have been laboratory confirmed in South Africa since 1981. Although cases have been reported from all nine provinces, cases are mostly reported from the semi-arid region of South Africa including the Free State and Northern Cape Provinces. More than two thirds of cases reported an exposure to ticks, be it tick bites or squashing of ticks. Transmission of CCHF virus may also occur through direct contact with blood or tissues of infected animals. Livestock and other animals may also be infected with CCHF virus although the do not develop signs and symptoms related to the infection. Vireamia tends to be transient in animals but presents a window period for transmission through hunting and slaughtering practices.

The case reported here is the fourth case of CCHF confirmed in South Africa for 2014 to date. The other cases were reported from the Northern Cape (n=2) and Free State (n=1) Provinces. One of the three cases reported (not including the current case) had a fatal outcome.

Source: Division of Public Health Surveillance and Response and Centre for Emerging and Zoonotic Diseases, NICD-NHLS

b Rabies

Since January 2014, five cases of human rabies have been confirmed. Four infections were acquired after exposure to dogs within South Africa whilst the remaining case involved a man bitten by a dog in Angola (who was evacuated for medical care to a Johannesburg hospital, where he died). There have been no additional laboratory confirmations in the past two months of August and September.

At least 297 cases of dog rabies were reported in South Africa during 2013, with seven laboratory-confirmed fatal human cases recorded for the year. Rabies is endemic throughout South Africa, but most infections have historically been acquired in the provinces bordering the eastern coastline. KwaZulu-Natal (30%) and Mpumalanga (24%) provinces accounted for the highest proportion of dog rabies cases in 2013. Prior to 2013, dog rabies cases from KwaZulu-Natal Province would account for more than half of the animal rabies cases reported nationally per year,[1] but there has been considerable progress in controlling dog rabies in this province over the past 20 months. The last human case reported from KwaZulu-Natal Province was that of a young child from eThekwini municipality near Durban in April 2013. Despite the apparent progress from intensified control efforts that began in 2009, the recognition of at least four human rabies cases in the province in mid-2012 serves as a reminder that sustained high rabies vaccination coverage is essential to avoid resurgence of infections in dogs and consequently in humans. Since 2006, a total of 39 human rabies cases has been reported from Limpopo Province, mostly from the Vhembe district. Other provinces where cases are frequently reported for the same period included KwaZulu-Natal (n=34) and the Eastern Cape (n=29). A total of six human rabies cases has been reported from Mpumalanga Province since 2008. There may be underreporting of human rabies cases from this province since the districts surrounding the Kruger National Park frequently report dog rabies cases. Although rabies can be acquired anywhere in South Africa, the current areas of concern are Mthatha and Queenstown areas in the Eastern Cape, Vhembe district and Tzaneen surrounds in north-west Limpopo Province, and Bushbuckridge and Mbombela surrounds in Mpumalanga Province. Vigilance must be maintained across KwaZulu-Natal Province, in particular the Durban surrounds (eThekwini), and the previous hotspots in Zululand, Port Shepstone and the provincial border with Eastern Cape Province. An ongoing outbreak of dog rabies in the Rustenburg/Swartruggens areas of North West Province is also concerning.

The National Institute for Communicable Diseases (NICD) serves as the reference laboratory for investigation of suspected human rabies cases and operates a hotline for clinical advice. On 28 September each year, the world unites in the fight against rabies. This year's Rabies Day was themed "*Together Against Rabies*" and celebrated through events in various countries to promote public awareness.

The NICD and Sanofi Pasteur/Merial hosted an event on 30 September to raise awareness for the control and prevention of this incurable disease. Health professionals and members of the public can

access more information on rabies through the NICD website.[2]

1. http://www.nda.agric.za/vetweb/epidemiology/Disease%20Database/OIEData/OIE_query_Criteria.asp
2. http://www.nicd.ac.za

Source: Centre for Emerging and Zoonotic Diseases, NICD-NHLS

c Odyssean malaria in Gauteng Province

On 26 September 2014, the Outbreak Response Unit was notified of a case of malaria at South Rand Hospital, Gauteng Province. The patient, a 7-year-old girl, presented to hospital on 21 September 2014 with a short history of fever and sore throat. There was no history of recent travel to a malaria-endemic area. A diagnosis of tonsillitis was reached, and she was treated with antibiotics and analgesics and discharged home. The patient's condition worsened and she returned to hospital two days later presenting with fever, sore throat, diarrhea and vomiting.

The initial diagnosis on admission was acute gastroenteritis; she was hospitalised and received treatment. Laboratory findings included a decreased platelet count of 17 x 10^9/L. An astute laboratory technologist noted the presence of malaria parasites on a routine haematology differential smear. *P. falciparum* was confirmed on malaria smear. Unfortunately, the patient died before malaria treatment was commenced.

An entomological investigation was conducted at the case-patient's residence and surrounds. All mosquitoes captured were identified as *Culex* spp.; *Anopheles* spp. mosquitoes were not found at any of the sites sampled.

This is an example of an unusual malaria case in a non-endemic area due to importation of infected mosquitoes from endemic areas. The transmission of malaria outside endemic areas is usually unexpected, resulting in delayed diagnosis and treatment, and is therefore often associated with severe illness or a fatal outcome. It is likely that road traffic arriving from endemic areas in and around South Africa is the source of most of the infected mosquitoes responsible for odyssean malaria cases. Healthcare workers need to maintain a high index of suspicion for malaria in all patients presenting with fever >38^{0}C, headache and flu-like illness, or fever >38^{0}C with impaired consciousness where no obvious cause is evident, and in whom no recent history of travel to a malaria area is forthcoming.

A single negative malaria test does not exclude malaria. If clinical suspicion for malaria is high and the first test negative, repeat tests every 12-24 hours until the patient is better or an alternative diagnosis is confirmed. Low platelets that are otherwise unexplained may indicate the possibility of malaria. Malaria is a notifiable medical condition and must be reported to local health authorities.
The malaria season in South Africa typically extends from September to May each year. Cases of both local and imported disease can be expected, especially as travellers return from malaria endemic areas around this period. The malaria-endemic provinces within South Africa are KwaZulu-Natal (north-eastern part), Mpumalanga and Limpopo. Neighbouring countries such as Zimbabwe and Mozambique also have malaria-endemic areas and are an important source of imported malaria into South Africa.

The South African National Malaria Treatment Guidelines can be accessed at: http://www.health.gov.za/docs/Policies/2011/malaria_prevention.pdf

Source: Division of Public Health Surveillance and Response NICD-NHLS; Malaria Control Program, National and Provincial Department of Health

2 VACCINE-PREVENTABLE DISEASES

a Measles in Namibia

Update for October 2014 indicates that Namibia, Angola, Chad, Ethiopia and Somalia reported measles incidence rates of ≥50/1,000,000 population for the 12-month period from September 2013 to August 2014. No measles outbreaks have occurred in South Africa since 2012, although sporadic cases have been identified. South Africa is at risk for importation of wild-type measles

virus from the ongoing measles outbreaks in other African countries, and all health practitioners should be vigilant and encourage timely uptake of EPI vaccines.

More than 700 samples from Namibia were tested for measles at the NICD during 2013/2014, and positive cases were further tested to identify the strain of measles virus. A single genotype (B3) was identified, with three distinct clusters. Sequences from specimens collected from the Ohangwena region, indicated with an arrow in Figure 1 (courtesy of ESA EPI monthly bulletin) formed a unique cluster, whereas sequences from specimens collected from the other highlighted regions in Figure 1 formed the main cluster. The main cluster demonstrates the continued circulation of the virus that caused the large measles outbreak in eastern and southern Africa during 2009-2011. A single sequence (specimen details still to be provided) did not cluster with either group.

Any suspected measles case with fever, rash and at least one of the three Cs (coryza, conjunctivitis or cough) should have a blood sample sent to the NICD with a measles case investigation form (available on the NICD website, www.nicd.ac.za).

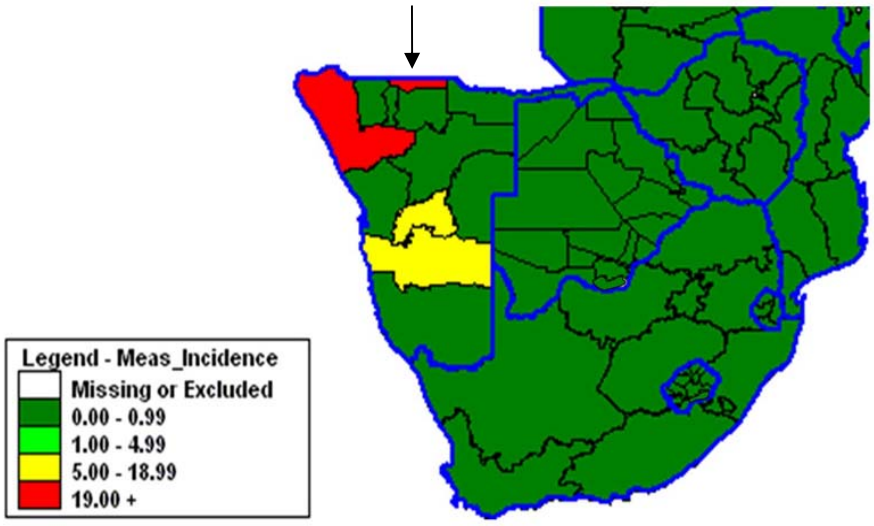

Figure 1. Confirmed measles incidence rate (per 1,000,000) in the eastern and southern African region, August 2014 (data until June 2014)

Source: Centre for Vaccines and Immunology, NICD-NHLS

b Rubella clusters in South Africa, 2014

Since the beginning of this year, the NICD received three notifications of rubella clusters in educational or workplace settings. A total of hundred and thirty-four rubella cases were notified in these clusters, which occurred at a university in Western Cape Province, a primary school in Eastern Cape Province and a factory in KwaZulu-Natal Province. Rubella cases reported from the university and factory were adults of a wide age range, including women of child-bearing age; the primary school cluster affected mostly children under the age of 15 years.

Rubella infection during the first 18 weeks of pregnancy poses a serious risk to the developing fetus, and may result in congenital rubella syndrome (CRS). CRS is characterised by deformation of the fetus' developing organs, leading to hearing loss, cardiac defects, and other abnormalities.

All clusters of rubella need to be investigated and proper control and preventive measures put in place. When there is a cluster of rubella cases in an educational institution or workplace setting, the following measures are recommended:

- Ill persons with probable/confirmed rubella disease should be excluded from work or school for 7 days after onset of rash
- Health promotion messages should include the following:
  - ◊ education, considering that the mode of spread is through droplet and, to a lesser

extent, direct contact with nasopharyngeal secretions.
    - ◊ Encourage ill employees to report to occupational health officer as soon as possible.
- In a school setting, all sick children should stay at home until they have recovered from the signs and symptoms of rubella infection before they go back to school.
- Pregnant women (known or potentially pregnant) must be particularly vigilant. Where feasible, pregnant women are advised to stay away from work until the outbreak is over – this would be 23 days after the onset of rash of the last reported case in the outbreak. Should a pregnant woman develop symptoms suggestive of rubella, she must see a doctor immediately for counselling regarding the risks of adverse pregnancy outcomes following rubella infection
- In rubella outbreaks, susceptible individuals (i.e. those never previously exposed to rubella through natural infection or vaccination), especially women of childbearing age who are not pregnant, should be encouraged to get MMR vaccine. MMR vaccine is contra-indicated during pregnancy, and is it advisable to test for pregnancy before administering the vaccine.

In an outbreak situation, persons are considered immune to rubella if:

- they have documented evidence of having received at least one dose of MMR vaccine at ≥12 months of age
- there is laboratory evidence of rubella immunity (i.e. rubella IgG positive)
- there is laboratory confirmation of previous natural infection.

Rubella is endemic in South Africa, with clusters often occurring during autumn and spring. Rubella infection is characterised by rash, mild fever, posterior cervical and pre-auricular lymphadenopathy, and sometimes arthralgia. It is generally a mild illness in children, with little cause for concern. The signs and symptoms of rubella are often confused with that of measles infection. In South Africa rubella vaccine is not included in the Expanded Programme on Immunisation (EPI), but MMR is administered in the private sector. Most South Africans who are immune will have acquired rubella infection during childhood. Currently, active rubella surveillance is not routinely conducted in South Africa and rubella infection is not a notifiable medical condition. However, CRS is a notifiable medical condition, and women who are infected during their pregnancy must be followed up closely.

Source: Centre for Vaccines and Immunology, NICD-NHLS

4 SEASONAL DISEASES

a Influenza

Influenza A(H1N1) cluster

A cluster of three cases of severe respiratory illness was reported from Uitenhage in Eastern Cape Province on 26 September 2014. The first patient, a 48-year-old man, became ill on 11 September 2014 with shortness of breath. He had no fever or flu-like symptoms. He had multiple comorbid conditions including diabetes mellitus, hypertension, ischaemic heart disease and coronary artery disease. He was overweight (135 kg), a heavy smoker and drank large amounts of alcohol. He was admitted on Friday 12 September 2014 to the intensive care unit (ICU) of a private health facility. Soon after admission to ICU, he developed acute respiratory distress syndrome, hypotension and a fever. He subsequently developed cardiac failure and renal failure and demised on Sunday 14 September 2014. He was not tested for influenza and did not receive specific influenza antiviral treatment.

The second patient (aged 38 years) was the first patient's nephew. He became ill on 11 September 2014 with a cough and a sore throat. He had no fever on initial presentation and was admitted for treatment of pneumonia on 15 September 2014. He was previously well, but also a heavy smoker and drank large amounts of alcohol. He weighed 120kg. On 18 September 2014, he developed a fever, with difficulty breathing and was transferred to the ICU. A tracheal aspirate taken on 26 September 2014 tested positive for influenza A (H1N1). He received treatment with oseltamivir on 27 September 2014. He remained in the ICU receiving ventilatory support until his death on 5 October 2014.

The third patient was a 14-year-old known asthmatic on treatment. His grandfather was a close friend of the second patient. He became ill on 23 September 2014, when he presented to the general practitioner with a cough. He was treated symptomatically and discharged. A day later he presented to the general practitioner again with a temperature of 39°C, headache, and a worsening cough. He was admitted into isolation to a private

health facility because of worsening symptoms. An investigation into the cluster of severe respiratory illness was undertaken. Pharyngeal swabs taken on 26 September 2014 tested positive for influenza A (H1N1). He received oseltamivir on 25 September 2014 and recovered. His grandfather also reported a mild respiratory illness on 12 September 2014 but was not tested for influenza. The chain of transmission is therefore only speculative.

Active contact tracing was performed aiming to identify any ill contacts of the cases. A further 14 cases of mild respiratory illness were identified, one of whom was confirmed to have influenza A (H1N1) infection. No further cases of severe respiratory illness were identified. It appears that all severe cases had risk factors associated with developing severe influenza such as obesity, diabetes, cardiovascular disease and asthma.

Influenza is a viral disease that affects primarily the respiratory tract. An increase in cases of influenza is generally seen annually during the winter months in South Africa. The commonest influenza subtype identified this year was influenza A (H3N2)[1] but occasional cases of influenza A(H1N1) have been identified. Clusters of severe influenza are uncommonly identified. It is important to investigate clusters of severe respiratory disease in order to identify the emergence of new and mutated strains of known respiratory viruses or new severe pathogens like MERS-CoV. Patients that have underlying chronic conditions are at increased risk for contracting severe respiratory illness or death due to influenza. Common underlying chronic conditions which serve as a risk factor for developing severe and fatal illness are: asthma, cardiac disease, diabetes and obesity.[2] In this cluster of cases, all of the severe cases had underlying illnesses which predispose to more severe influenza. Specific influenza antiviral treatment in the form of oseltamivir was not given to the first patient and was started late in the second patient. It is recommended that all patients with underlying illness presenting to hospital with pneumonia during the influenza season should be started on empiric oseltamivir to reduce the risk of progression to severe illness and death.[3] Oseltamivir is most effective when started within 48 hours of onset of symptoms.

Influenza Surveillance

The number of specimens submitted for respiratory viruses by Viral Watch centres, which conduct surveillance for influenza-like illness (ILI) has continued to decline, dropping from 60 to 90 per week during June and July, to fewer than 10 per week in the last week of September and first week of October. The season started in week 21 (ending 25 May) when the influenza detection rate rose above 10% and peaked in week 27 (ending 6 July) with a detection rate of 80.4%. The season ended in week 37 (week ending 14 September). The dominant influenza strain in 2014 was A(H3N2)

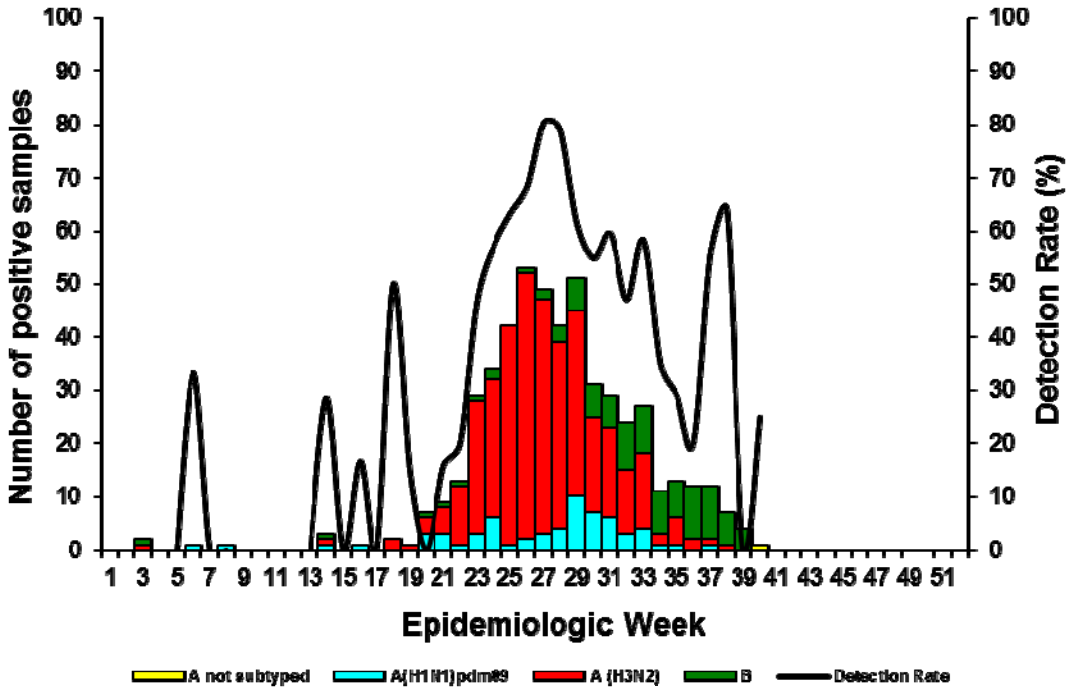

Figure 2. Number of positive samples by influenza types and subtypes, and detection rate by week. Viral watch surveillance programme 2012

accounting for 352/513 (69%) detections. Since week 34 (ending 24 August) the majority of the detections, 45/60 (75%), have been influenza B.

As at 10 October 2014, 1513 patients hospitalised with severe acute respiratory illness were tested for respiratory viruses at five sentinel sites. Of these, 69 (5%) patients tested positive for influenza. The majority, 42 (61%), of the influenza detections were influenza A(H3N2) followed by influenza B (19/69,27%) and influenza A(H1N1)pdm09 (3/69, 4%). In addition, 25% (384/1513), 13% (204/1513) and 9% (137/1513) were positive for rhinovirus, RSV and adenovirus, respectively.

Summary of the 2014 influenza season

During the 2014 influenza season influenza A (H3N2) predominated throughout the season. Influenza A(H1N1)pdm09 and influenza B co-circulated, with increasing circulation of influenza B towards the end of the season.

Recommended composition of influenza virus vaccine for use in the 2015 southern hemisphere Influenza season

The WHO has recommended that trivalent vaccines for use in the 2015 southern hemisphere influenza season contain the following:

an A/California/7/2009 (H1N1)pdm09-like virus;
an A/Switzerland/9715293/2013 (H3N2)-like virus[a]
a B/Phuket/3073/2013-like virus.

[a] A/South Australia/55/2014, A/Norway/466/2014 and A/Stockholm/6/2014 are A/Switzerland/9715293/2013-like viruses.

The full report of the recommendations for the southern hemisphere influenza vaccine can be accessed at:
http://www.who.int/influenza/vaccines/virus/recommendations/201409_recommendation.pdf.

References

1. http://nicd.ac.za/assets/files/NICDNHLS%20Communicable%20Disease%20Communiqu%C3%A9_SEPTEMBER%20_final.pdf
2. www.who.int/influenza/surveillance.../Risk_factors_H1N1.pdf

Source: Centre for Respiratory Diseases and Meningitis, NICD-NHLS

b Meningococcal disease

In South Africa, meningococcal disease is endemic and cases occur year-round, but with seasonal peaks in winter and early spring. In addition, there is a natural cyclical pattern of meningococcal disease with peaks of disease occurring every 5 to 10 years. Current rates of meningococcal disease in South Africa are at a nadir and we are expecting an increase in rates based on known periodicity.

Cases of meningococcal disease continue to be reported from across the country. There are inherent delays in laboratory-based reporting, which lags behind clinical reports; in addition, because our laboratory-based surveillance system excludes disease diagnosed clinically without laboratory confirmation, reported rates represent a minimum estimate of the true burden of disease.

By the end of epidemiological week 39 (week ending 30 September 2014), a total of 126 laboratory-confirmed cases was reported to the Centre for Respiratory Diseases and Meningitis (CRDM), NICD-NHLS (Table 2). The highest burden of disease is among the <1 year age group, where 21 (17%) cases have been reported so far. This is lower than the number of cases reported for the equivalent time period and age group in 2013 (n=36, 21%).

The reported cases were caused by diverse serogroups, which is in keeping with sporadic endemic disease in the country. Serogroup data were available for 78/126 (62%) of cases. Serogroups B, W* and Y have been identified most commonly this year (23/78, 29% serogroup B; 28/78, 36% serogroup W* and 15/78, 19% serogroup Y). There were also 11 cases of serogroup C and 1 case of serogroup X disease.

Clinicians should have a high index of suspicion for meningococcal disease in patients who present with an acute febrile illness and nonspecific early signs and symptoms. Disease typically has a rapid progression and should be managed as a medical emergency in order to reduce morbidity and mortality. All cases of suspected and/or confirmed meningococcal disease (meningitis and sepsis) should be notified telephonically to the Department of Health.

Table 2. Number of laboratory-confirmed meningococcal disease cases reported until end of week 39, 2013 and 2014, by province

	Year	
Province	**2013**	**2014**
Eastern Cape	32	27
Free State	11	4
Gauteng	48	40
KwaZulu-Natal	30	12
Limpopo	1	0
Mpumalanga	3	1
Northern Cape	2	0
North West	5	1
Western Cape	37	41
	169	126

*Previously known as serogroup W135. Harrison OB, EID 2013: 19(4) 566-573

Source: Centre for Respiratory Diseases and Meningitis, NICD-NHLS

5 ANTIMICROBIAL RESISTANCE

The Johannesburg and Cape Town Antimicrobial Resistance Reference Laboratories (AMRRL) of the Centre for Opportunistic, Tropical and Hospital Infections (COTHI) at NICD/NHLS have been testing referred isolates of suspected carbapenemase-producing Enterobacteriaceae (CPE) for the presence of selected carbapenemase genes. For September 2014, a total of 52 Enterobacteriaceae isolates was received. Twenty-seven isolates were screened, 12 of which were carbapenemase-producing Enterobacteriaceae. Twenty-five isolates were not processed due to issues experienced with the ordering of reagents. Most isolates were *Klebsiella pneumoniae* (16) followed by *Enterobacter cloacae* (6) (Figure3).

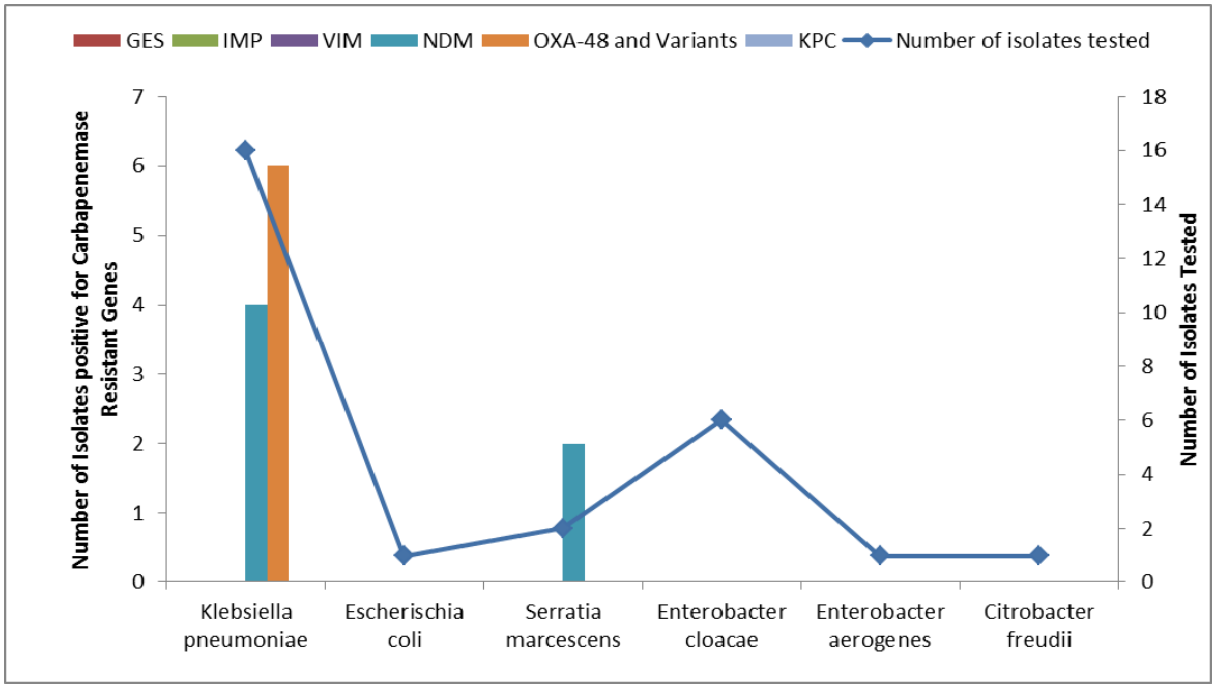

Figure 3. Enterobacteriaceae isolates screened (n=27) and confirmed CPE (n=12) during September 2014 at AMRRL (NICD-NHLS)

Six NDM-positive isolates were identified. Four of these were from private hospitals – three from KwaZulu-Natal and one from the Western Cape. Two NDM-positive isolates from public hospitals in Gauteng and the Western Cape were identified. Another six OXA-48-positive isolates were identified; two from a private hospital in Gauteng and four from the public sector – three from the Eastern Cape and one from the Western Cape (Figure 4).

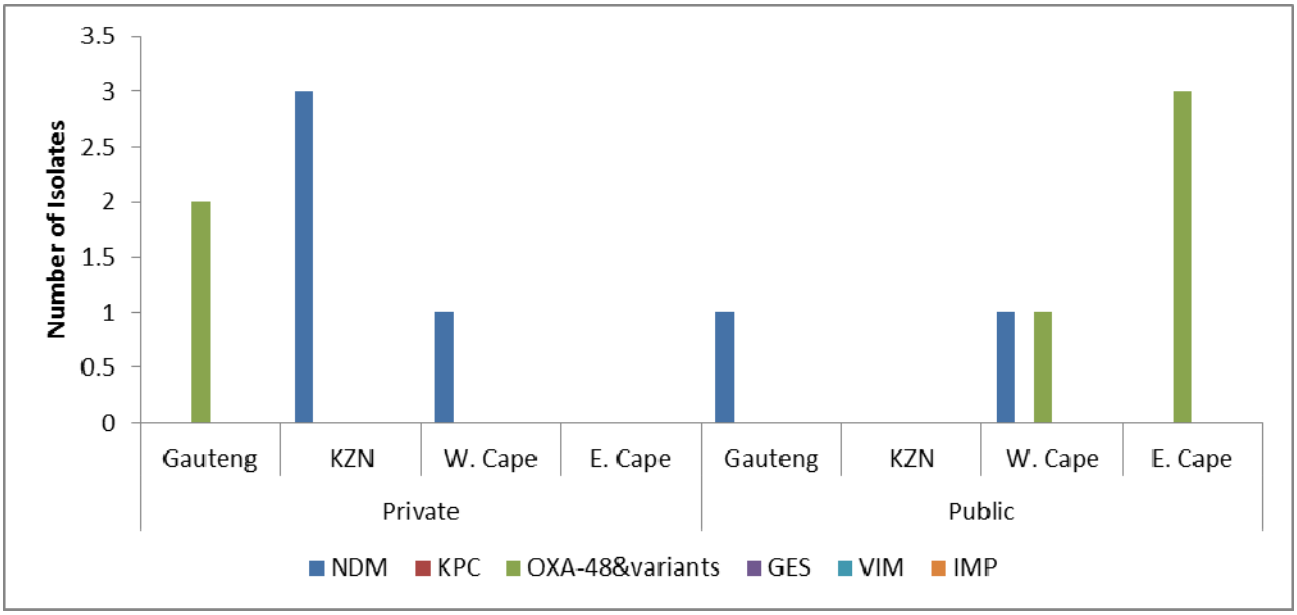

Figure 4. Distribution by province of CPEs (n=12), September 2014

It is important to note that these figures do not represent the current burden of CPEs in South Africa. Given that CPE infections are currently not reportable or notifiable in South Africa, there is no platform for appropriate surveillance reports and consequently no locally representative data is available. This is of major concern, since meaningful data can inform public health policy and highlight priorities for action. Controlling the spread and limiting the impact of CPEs in South Africa will require 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 the AMRRL, NICD/NHLS. Please telephone (011) 555 0342/44 or email ashikas@nicd.ac.za and olgap@nicd.ac.za for queries or further information. In the Western Cape area, please email colleen.bamford@nhls.ac.za.

Source: Centre for Opportunistic, Tropical and Hospital Infections, NICD-NHLS

6 BEYOND OUR BORDERS

The 'Beyond our Borders' column focuses on selected and current international diseases that may affect South Africans travelling abroad.

Disease & countries	Comments	Advice to travellers
1. Vector-borne diseases		
Crimean-Congo haemorrhagic fever Pakistan (Sindh)	As of 10 October 2014: 2 confirmed cases with one death.	Crimean-Congo haemorrhagic fever is transmitted to people from ticks and livestock animals. Human-to-human transmission can occur from contact with blood and body fluids of infected persons. Avoid tick bites by wearing long-sleeved shirts, long pants, and light-coloured clothing to deter ticks.
Chikungunya North America United States of America Caribbean Ongoing transmission Central America Ongoing transmission South America Venezuela (National) Colombia (National) Brazil (National)	As of 30 September 2014:125 cases. As of 01 October 2014: 2 752 cases with 115 deaths across six Latin Caribbean countries and six non-Latin Caribbean countries. As of 01 October 2014:118 cases across five central American countries. As of 01 October: 1 599 cases. As of 01 October 2014: 5 785 cases. As of 01 October 2014: 79 cases.	Chikungunya is a mosquito-borne viral infection transmitted by *Aedes* spp. mosquitoes, which bite mostly during the day. Travellers should wear long-sleeved shirts and long pants during the day and stay in well-ventilated (fan/air-conditioned) rooms.
Marburg Uganda (Mpigi district)	As of 06 October 2014: 8 suspected cases and 1 confirmed case.	*Rousettus aegypti* fruit bats are natural hosts of Marburg virus. The virus is spread to people from eating fruit bats and through direct contact with the blood or bodily fluids of an infected person. Regular hand washing should be performed when in direct contact with a sick person.

Disease & countries	Comments	Advice to travellers
1. Vector-borne diseases (continue)		
Dengue fever		
United States of America (Florida)	As of 30 September 2014: 5 cases.	
Mexico (National)	As of 10 October 2014: 909 cases.	
Venezuela (National)	As of 6 October 2014: 51 865 cases.	
Turks and Caicos Islands	As of 06 October 2014: 48 cases with one death.	
Panama (National)	As of 06 October 2014: 4 613 cases.	
El Salvador (National)	As of 6 October 2014: 12 929 cases with 4 deaths.	
Japan (Tokyo)	As of 08 October 2014: 151 cases.	
Philippines (Lubao, Central Luzon).	As of 09 October 2014: 161 cases.	
China (Guangdong Province)	As of 08 October 2014: 24 489 cases.	Dengue fever (like chikungunya) is a mosquito-borne viral infection transmitted by *Aedes* spp. mosquitoes, which bite mostly during the day. Travellers should wear long-sleeved shirts and long pants during the day and stay in well-ventilated (fan/air-conditioned) rooms.
India (National)	As of 11 October 2014: 5 658 cases with 12 deaths.	
Pakistan (Phakhtonkhwa province, Punjab)	As of 10 October 2014: 448 cases.	
France (Provence-Alpes-Cote d'Azur region)	As of 06 October 2014: 4 cases.	

Disease & countries	Comments	Advice to travellers
2. Food- and water-borne diseases		
Cholera Ghana (Volta, Greater Accra region, Brong Ahato region, Eastern Volta region)	As of 11 October 2014: 15 400 cases, 126 deaths.	Cholera is an acute diarrhoeal illness that causes severe dehydration. Drink safe water (bottled water with an unbroken seal, boiled water or water treated with chlorine tablets). Washing of hands with soap and safe water must be practiced often. Food must be well-cooked and prepared before eaten. Peel fruit and vegetables before eating.
3. Respiratory diseases		
MERS- CoV Globally Saudia Arabia	As of 12 October 2014: a total number of 853 laboratory confirmed cases and 324 deaths. As of 14 October 2014: 762 cases with 324 deaths.	Good hygiene and basic infection prevention practices can minimise risk of respiratory infections in travellers: • cough etiquette • avoiding contact with sick people • avoid handling of animals • frequent hand washing with soap and water or the use of an alcohol-based hand rub. Travellers with diabetes, chronic lung disease and immune compromised states are at risk of infection and should avoid contact with animals if possible. Strict hand washing must be followed after touching animals. Avoid raw camel milk or undercooked camel meat at all times.Travellers should avoid contact with animals and eat food that is fully cooked. Infection control practices such as regular hand washing must be followed to prevent infection.

References and additional reading:

ProMED-Mail (www.promedmail.org)
World Health Organization (www.who.int)
Centers for Disease Control and Prevention (www.cdc.gov)
Last accessed: 14 October 2014

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