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

Communicable Diseases Communiqué

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CONTENTS

1 SEASONAL DISEASES

a Influenza

Influenza data from the Viral Watch surveillance programme

The influenza season, which started in epidemiologic week 19 (week ending 10 May 2015) continues, though the number of specimens submitted by Viral Watch sites has started to decline.

To date (13 July 2015), influenza has been detected in 446/816 (55%) of specimens submitted by Viral Watch sites. Of the influenza cases, influenza A(H1N1)pdm09 has been detected in 54% (240/446), influenza A(H3N2) in 41% (184/446), influenza B virus in 4% (18/446) of patients; the remaining four cases are influenza A but are as yet untyped (Figure 1). In addition, 38 specimens have been received from patients at a point of entry into South Africa; influenza was detected in 24 of these patients.

Influenza data from the national syndromic surveillance for pneumonia

From 01 January to 13 July 2015, 1 894 specimens from patients admitted with severe respiratory illness were tested from the six national syndromic surveillance for pneumonia programme sentinel sites.

The detection rate for influenza was 7% (124/1 894). Influenza A(H1N1)pdm09 was detected in 57% (71/124), influenza A(H3N2) pdm09 in 35% (44/124), and influenza B in 7% (9/124) of these specimens. In addition, other respiratory viruses were detected: 17% (330/1893) were positive for respiratory syncitial virus and 14% (265/1890) were positive for rhinovirus.

The 2015 influenza season

This year to date, influenza A is the predominant circulating virus type, influenza A(H1N1)pdm09 being the most common subtype. Influenza A(H1N1)pdm09, previously known as the 'swine flu', has been circulating as one of the influenza seasonal strains since 2010. Identification of patients with this strain during the influenza season should be treated as other influenza cases, and there is no specific public health intervention recommended. Influenza A(H3N2) is circulating at increasing levels in recent weeks. Influenza immunisation is safe and effective and is the single most important way to prevent influenza and influenza-related complications. It's never too late to vaccinate!

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

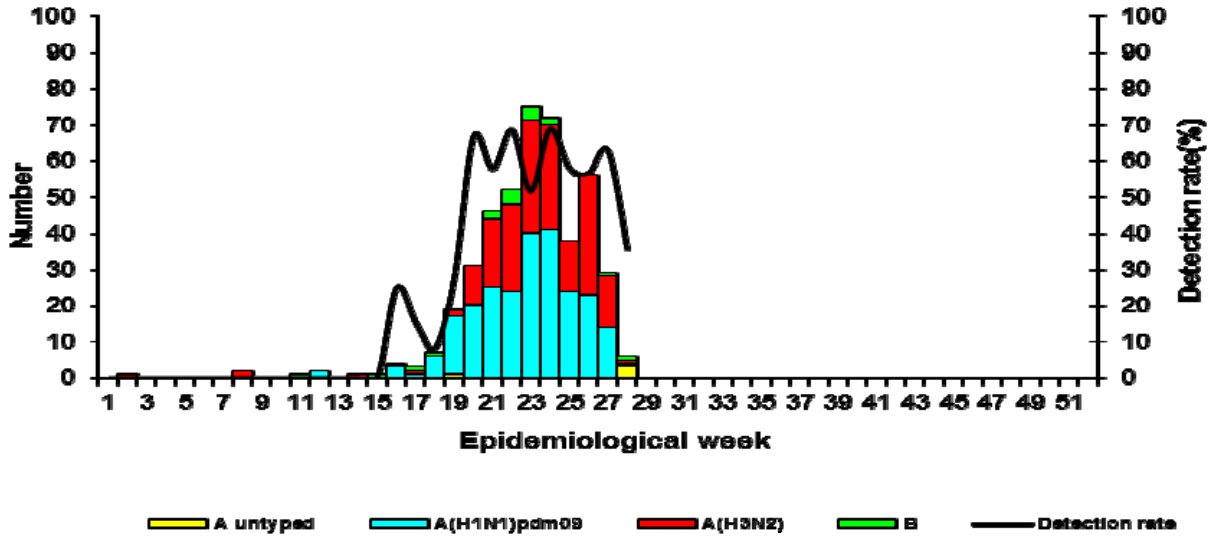


Figure 1. Number of positive samples by influenza types and subtypes and detection rate by week, Viral Watch programme, 2015

b Meningococcal disease

Meningococcal disease is endemic in South Africa. Although cases occur year-round, seasonal peaks are noted 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.

A slight increase in case numbers has been reported over the last few weeks, in line with the normal seasonal increase of cases seen during the winter months. There are inherent delays in laboratory-based reporting, which lags behind clinical reports; in addition, because laboratory-based surveillance excludes disease diagnosed clinically without laboratory confirmation, observed rates represent a minimum estimate of the true burden of disease.

By the end of epidemiological week 26 (week ending 28 June 2015), a total of 56 laboratory-confirmed cases was reported to the Centre for Respiratory Diseases and Meningitis (CRDM), NICD-NHLS (Table 1). The highest burden of disease is seen in young children. Amongst the <1 year age group, 10 (18%) cases have been reported so far, similar to the number of cases for the equivalent time period and age group in 2014 (n=11, 18%).

The reported cases were caused by diverse serogroups, which is in keeping with sporadic endemic disease in the country. Serogroup data were available for 35/56 (63%) of cases. Serogroups B, W* and Y have been identified most commonly this year (10/35, 29% serogroup B; 12/35, 34% serogroup W* and 9/35, 26% serogroup Y). There were also 4 cases of serogroup C disease.

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

Table 1. Number of laboratory-confirmed meningococcal disease cases reported until end of week 26, 2014 and 2015, by province

	Year	
Province	**2014**	**2015**
Eastern Cape	14	14
Free State	2	4
Gauteng	17	10
KwaZulu-Natal	3	7
Limpopo	0	1
Mpumalanga	1	3
Northern Cape	0	0
North West	0	2
Western Cape	24	15
Total	61	56

Since the meningococcal season is underway, 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.

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

2 VACCINE-PREVENTABLE DISEASES

Diphtheria: update on outbreak in KwaZulu-Natal Province

Although there have been no confirmed cases of diphtheria in KwaZulu-Natal Province (KZN) since 13 June 2015, the KZN Department of Health reported a suspected case on 24 July 2015 that is currently under investigation. A 12-year-old boy from Harding (near Port Shepstone) presented to hospital on 24 July 2015 with typical symptoms of severe respiratory diphtheria (a 'bull neck', extensive pharyngeal membrane and respiratory distress) and died later the same day. Appropriate samples were collected, and results of microbiological investigations are pending.

As at 27 July 2015, there are 16 reported cases of diphtheria (11 confirmed, one probable, three possible and one under investigation). The number of contacts of case-patients with diphtheria who have been identified as asymptomatic carriers of *Corynebacterium diphtheriae* has increased from three to six, and all of these persons have been managed appropriately. The KZN Department of Health has continued with containment and preventive activities, which have included contact tracing and management, catch-up vaccination campaigns at schools in the affected districts, and community mobilisation campaigns. The National Department of Health is planning to include a booster dose for diphtheria in its upcoming HPV vaccination campaign for Grade 4 learners (10- and 11-year-olds).

A review of Td booster vaccination coverage for 6- and 12-year-old children in South Africa has been conducted, with KZN reporting coverage rates of <50%. These low vaccination coverage rates very likely contributed to the increased vulnerability of older children and adolescents to infection with *C. diphtheriae.*

In view of the newly reported suspected case under investigation, we urge healthcare workers and laboratory workers countrywide to be on the alert for possible cases of diphtheria.

Recommendations for the management and public health response of diphtheria cases are available on the NICD webpage, in the guidelines section (http://www.nicd.ac.za/?page=guidelines&id=73). Healthcare professionals with queries can also contact the NICD Hotline at 082-883-9920 (a 24-hour service for healthcare professionals).

Source: Division of Public Health Surveillance and Response, NICD-NHLS; Microbiology Laboratory, NHLS KwaZulu-Natal Academic Complex; Diagnostic Media Production Laboratory, NHLS Green Point Complex; Clinicians at hospitals in eThekwini and Ugu Districts, KwaZulu-Natal Province; KwaZulu-Natal Province Department of Health; eThekwini Municipality; Ugu District Department of Health

3 ZOONOTIC AND VECTOR-BORNE DISEASES

a Rabies

A case of rabies in an 8-year-old child from Free State Province was laboratory confirmed on 16 July 2015 by the NICD.

On 02 May 2015, the child was bitten on the left upper leg by a dog in Meheleng, located close to Ficksburg in Free State Province. He received wound treatment and a tetanus toxoid booster vaccination at a local district healthcare facility. Tragically, he did not receive rabies post-exposure prophylaxis (PEP) despite the category III wound inflicted by a potentially rabid dog. The dog was assessed by a local veterinary professional who deemed the animal healthy and in oestrus, despite reported behavioural changes that had initially raised the possibility of rabies. The dog died a few days later, but the owner failed to notify the veterinarian. The child presented initially with numbness at the wound site, abdominal and back pain, headache, loss of appetite, reluctance to drink liquids, and priapism. On consultation at a local district healthcare facility he was referred to a hospital in Ficksburg, but discharged the same day with a diagnosis of paraphymosis. He was seen again at the same hospital complaining of pain and weakness of the left leg, but again discharged the same day with an appointment to return for X-rays three days later. However, he deteriorated rapidly over the next two days and presented to a private general practitioner with seizures and difficulty breathing; he was admitted and immediately transferred to a hospital in Bethlehem with a working diagnosis of suspected rabies. He was noted to exhibit typical signs and symptoms of rabies, including hydrophobia, hypersalivation, delirium and hallucinations. Rabies immunoglobulin and rabies vaccine were administered. Multiple saliva samples (n=5), cerebrospinal fluid, sera (n=2) and skin biopsies (n=3) were submitted but tested negative for rabies. The provision of PEP after the onset of clinical illness is not indicated, since it has no positive bearing on the outcome of disease and moreover confounds ante-mortem diagnostic investigations. The child died on 06 July 2015. Post-mortem brain specimens were submitted to the NICD and tested positive, confirming the diagnosis of rabies. This case constitutes a healthcare system failure; the child should have received rabies PEP in accordance with the national guidelines when he presented to the healthcare facility following the injury, given the high-risk exposure. Rabies PEP is invariably effective in preventing infection after exposures if delivered appropriately, and a thorough risk assessment must be performed for any animal exposure.

Five cases of human rabies have been confirmed for South Africa in 2015 to date. These cases were reported from Limpopo (n=2), KwaZulu-Natal (n=1), Eastern Cape (n=1) and Free State (n=1) provinces. In addition, a suspected case of rabies from Eastern Cape Province was reported but could not be confirmed by laboratory testing.

The National Rabies Guidelines and more rabies-related information can be accessed on the NICD website: www.nicd.ac.za.

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

b Dengue fever

Dengue fever has become a major, international public health concern with an estimated annual incidence of 360 million infections, including 96 million that produce illness. This mosquito-borne virus is endemic in most tropical and subtropical countries of Oceania, Asia, the Caribbean, the Americas, and parts of Africa, and is reported as one of the most commonly identified cause of fever in travellers to these regions, second only to malaria. At present, numerous countries are experiencing severe or unprecedented dengue epidemics, notably Brazil, Malaysia, Philippines, Thailand and India.

History of dengue fever in South Africa

A South African dengue epidemic with local transmission was recorded in the summer of 1926-1927, affecting an estimated 50 000 people in and around Durban. It is believed to have started with passengers on board a ship travelling down the Mozambiquan coast, and as the viraemic period is quite short and ships typically travelled slowly, it is likely that the index case/s were infected at one of the East African seaports.

Mosquito vectors of dengue viruses are endemic to South Africa, and include populations of both sylvatic vectors (*Aedes furcifer* and *Aedes cordellieri*) in the eastern coastal plain and far

northern lowveld, and the main urban vector (*Aedes aegypti*) in the eastern half of the country. The potential for dengue virus importation into South Africa via infected travellers and mosquitoes clearly exists. The magnitude of the dengue problem in Africa is likely underestimated owing to a number of factors, including limited surveillance for dengue virus, the non-specific nature of the clinical presentation, the high prevalence of other febrile illnesses such malaria, typhoid fever or leptospirosis, and the paucity of laboratory testing capacity. Under-reporting of dengue cases is further exacerbated by the considerable number of patients who only experience mild or subclinical infections that would not warrant consultation with a healthcare professional.

Imported dengue fever cases in South Africa

Tourist destinations in endemic countries (particularly South and Central America, and Southeast Asia) are popular amongst South African travellers, and the number of laboratory-confirmed imported cases of dengue fever has increased in recent years. Nine cases were documented in 2011, 19 in 2012, 34 in 2013 and 25 in 2014. As at the end of June 2015, 10 cases have been recorded for the year to date; countries of infection included India, Thailand, Philippines and Uganda. Of concern is that the most recent case was confirmed by both specific antibody and virus nucleic acid (RT-PCR) detection, suggesting viraemia at the time of blood sample collection. A viraemic patient such as this presents a risk of introducing the virus into local mosquito vectors.

Clinical manifestations of dengue virus infection

The incubation period is typically 3-7 days (range 3-14 days) after the bite of an infected mosquito. Most dengue virus infections are asymptomatic, and symptomatic illness can range from self-limited dengue fever to dengue fever with shock syndrome. Classic dengue fever is characterised by a sudden onset of fever with headache, retro-orbital pain, and marked myalgia and arthralgia; a macular/ maculopapular rash may also be present. Common abnormal laboratory findings include thrombocytopenia (which is noted in most patients and is typically self-limiting), leukopenia, and modestly elevated serum AST levels. A small proportion of patients develop severe dengue, which manifests as dengue haemorrhagic fever or dengue shock syndrome; severe disease is more common amongst children and patients who are re-infected. There are no effective antiviral agents for treating dengue infection and treatment is supportive. For further information on the management of patients with dengue, refer to the World Health Organization guidelines for dengue diagnosis, treatment, prevention and control at http://apps.who.int/iris/bitstream/10665/44188/1/9789241547871_eng.pdf.

Differential diagnosis and laboratory investigation of dengue virus infection

Although malaria must always be the first consideration in returning travellers with acute febrile illness, dengue should also be considered in the differential diagnosis. The diagnosis of dengue fever is complicated by its non-specific clinical presentation and the co-circulation and transmission of various other arthropod-borne viruses by the same mosquito vectors (in particular chikungunya virus, which has also caused widespread outbreaks over recent years), necessitating specialised laboratory testing. Laboratory investigations in suspected dengue fever cases should include the collection of clotted blood during the acute phase (first 5 days of illness), as well as convalescent serum samples (collected 10-14 days after the acute sample). Conducting a full repertoire of serological and virological tests is strongly recommended as tests are highly dependent on timing of specimen collection. Appropriate infection prevention and control protocols should be observed when collecting and handling specimens and these should be packaged as biohazardous material. Store and transport at 4°C (or on ice packs) to the NICD-NHLS, 1 Modderfontein Rd., Sandringham, Gauteng, 2192.

Prevention of dengue fever: advice to travellers

At present there are no preventive dengue vaccines available. Since dengue viruses are transmitted by *Aedes* spp. mosquitoes, which usually bite during daytime, travellers to dengue-risk areas should be advised to use mosquito repellents containing DEET, wear long-sleeved pants and long-sleeved shirts during the day, and stay in well-ventilated (fan/air-conditioned) rooms where possible. Burning mosquito coils at night and sleeping under a mosquito net in a well-ventilated room is also helpful.

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

4 MISCELLANEOUS OUTBREAKS OF INTEREST

Tumbu fly cutaneous myiasis in KwaZulu-Natal Province

Outbreak in KwaZulu-Natal Province

On 01 June 2015, the Uthungulu District Department of Health received a notification about a suspected myiasis outbreak. A number of school children from Nhlabani (uMbonambi local municipality) and Mzingani areas (uMhlathuse local municipality) had presented at a local public healthcare facility with abscess-like lesions. Initially, five children were referred to the healthcare facility after their teachers noticed the skin lesions, mostly located on the skull, arms and legs. The children reported that the lesions began as a pimple, which enlarged over a number of days with subsequent emergence of a 'worm' or 'maggot'. The lesion then resolved and healed, in some cases associated with scarring.

Department of Health officials conducted an investigation at the school and surrounding community, and engaged in public health awareness and health promotion activities. Specimens (maggots) were collected and sent to the local National Health Laboratory Service (NHLS) for identification. Healthcare workers were advised to cover lesions with petroleum jelly ('Vaseline') which facilitates removal of the maggots, and not to prescribe antibiotics. During the school visits, 31 additional cases of infestation were identified amongst the children. A number of adults also reported infestation.

Cutaneous myiasis: useful information for healthcare professionals

Myiasis is an infestation of the skin by developing larvae (maggots) of a variety of fly species. Human myiasis occurs worldwide and is endemic in many poor socioeconomic regions of tropical and subtropical countries where poor hygiene and low socioeconomic status are important risk factors for acquiring myiasis. The most common flies that cause cutaneous myiasis in humans are *Dermatobia hominis* (the human botfly, not present in Africa) and *Cordylobia anthropophaga* (the tumbu fly, also known as the 'mango' or 'putsi' fly).

Adult female tumbu flies lay eggs on clothes or bedlinen that is hung out to dry, on soiled clothing, or in sand or soil contaminated by urine or faeces. After hatching, the tumbu fly larvae penetrate into healthy skin of humans or animals (such as dogs or rodents). Following skin penetration, an erythematous furuncle-like nodule develops after a few days; 8-12 days later, the mature larva leaves the lesion. The typical lesion characteristically has a central punctum that may have an exudate (serosanguinous or purulent), and inflammatory changes around the lesions are common. Symptoms include pruritis and pain, and sometimes a sensation of movement within the lesion. Once the mature larva is expelled, the lesion heals spontaneously unless bacterial superinfection occurs.

Human-to-human transmission of myiasis does not occur. Treatment of tumbu fly myiasis involves placing an occlusive ointment (such as petroleum jelly) over the lesion; this prevents the larva from breathing, forcing it to wriggle towards the surface and emerge spontaneously or be mechanically extracted.

Localised outbreaks of myiasis are not uncommon in South Africa, especially in the warmer, humid areas of North West, Limpopo and KwaZulu-Natal provinces.

Myiasis due to tumbu fly can be prevented through ironing laundry, drying laundry in full sunlight in well-ventilated areas, drying laundry under mosquito netting, or drying laundry in an electric dryer (tumble dryer). The use of insecticides or mechanical traps can assist in eliminating the flies from living and work areas. Affected dogs with large numbers of lesions may be dipped in an appropriate insecticide solution (as for prevention of tick or flea infestation) under veterinary guidance.

Source: Division of Public Health, Surveillance and Response, NICD-NHLS; District and Provincial Departments of Health, KwaZulu-Natal Province

5 INTERNATIONAL OUTBREAKS OF IMPORTANCE TO SOUTH AFRICAN TRAVELLERS AND HEALTHCARE WORKERS

a Middle East respiratory syndrome coronavirus (MERS-CoV): update and relevant information for South African healthcare professionals

Background

Middle East respiratory syndrome coronavirus (MERS-CoV) is a recently-identified respiratory virus which causes severe respiratory illness, and was first reported in Saudi Arabia in 2012. Since September 2012 and as of 17 July 2015, the WHO has been notified of a total of 1 368 laboratory-confirmed cases of human infection with MERS-CoV, including 490 deaths. MERS-CoV transmission continues in the Middle East, with the highest number of cases reported from Saudi Arabia, the United Arab Emirates (UAE) and Oman. To date all the cases reported from outside the Middle East have either had a recent travel history to the Middle East or could be linked to a chain of transmission originating from a case with a travel history to the Middle East. Countries in the Arabian Peninsula with laboratory-confirmed cases include Jordan, Saudi Arabia, Yemen, United Arab Emirates (UAE), Qatar, Oman, Kuwait and Lebanon. Countries with travel-associated cases include United Kingdom (UK), Tunisia, Egypt, Greece, Germany, Italy, Algeria, Austria, Turkey, Netherlands, Malaysia, Philippines, United States of America (USA), China, South Korea and Thailand.

MERS-CoV outbreak in South Korea

Korea has reported the largest outbreak of MERS-CoV outside of the Arabian Peninsula. Since May 2015 and as of 17 July 2015, the WHO has been notified of 186 MERS-CoV cases, including 36 deaths. The first laboratory-confirmed case was a 68-year-old man who had recently travelled between four countries in the Middle East from 18 April – 03 May 2015. Following this single imported case, all of the infections known to have occurred in South Korea have taken place in healthcare facilities and all cases have been linked to a single chain of transmission. The median age of cases is 55 years (range 16 to 87 years) and the majority of cases are male (59%). There have been no new cases reported since 04 July 2015. For the latest update on MERS-CoV cases, click on the WHO link below:
http://www.who.int/csr/disease/coronavirus_infections/en/.

Situation in South Africa

In South Africa, 50 samples have been tested for MERS-CoV for 2015 to date, and none have tested positive. Of the suspected cases investigated, 26% (13/50) were positive for influenza virus. The majority of the suspected cases, 72% (36/50), were identified and tested at point of entry to South Africa (OR Tambo International Airport).

Transmission

Although it is likely that zoonotic transmission is the starting point of most clusters, human-to-human transmission, though not sustained, seems to be the dominant mode of transmission for MERS-CoV. Almost all new cases are generated in healthcare facilities or among family members.

Precautions and infection prevention and control considerations

The WHO does not advise screening at points of entry or travel or trade restrictions. Travellers returning from the Middle East and South Korea who develop respiratory symptoms either during or within 14 days of their return should seek medical care and inform their healthcare providers about their recent travel.

Nosocomial transmission has been a hallmark of MERS-CoV, underscoring the critical importance of infection prevention and control (IPC). Appropriate IPC measures should be used while managing all patients with symptoms of acute respiratory infection, and whenever specimens are collected from cases under investigation. The WHO has published interim guidelines on infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care (2014) which can be accessed at:
http://www.who.int/csr/bioriskreduction/infection_control/publication/en/.

Indications for testing

The current MERS-CoV outbreak in South Korea highlights the continued risk of healthcare-associated transmission and the need for timely diagnosis and implementation of prevention and control measures. MERS-CoV should be suspected in any person who develops fever and symptoms of respiratory illness (such as cough or shortness of breath) within 14 days after travelling from countries in or near the Arabian peninsula and South Korea or to countries where MERS-CoV infection in human cases has been recently identified. Although the majority of cases have presented with severe disease, it is important to note that MERS-CoV can also present as a mild

illness. The case definitions for identifying patients to be investigated for MERS-CoV (referred to as a Patient Under Investigation (PUI)) have been revised. A person with both clinical features AND epidemiologic risk should be considered a PUI as described below:

Clinical features		Epidemiologic risk
Severe illness: Fever (≥38°C) and cough with pneumonia or acute respiratory distress syndrome (ARDS) (based on clinical or radiologic evidence)	AND	History of travel within 14 days before onset of illness to the Arabian peninsula[1] or in countries where MERS-CoV is known to be circulating or where human infections have recently occurred OR Close contact[2] with a symptomatic traveller who developed fever and acute respiratory illness within 14 days after travelling from countries in or near the Arabian peninsula OR A history of being in a healthcare facility, within 14 days before onset of illness, in the country where hospital-associated-MERS-CoV infections have been reported OR The disease is in a cluster[3] that occurs within a 14 day period, without regard to place of residence or history of travel, unless another aetiology has been identified.
A person with acute respiratory illness of any degree of severity	AND	Within 14 days before onset of illness, had any of the following exposure: Close physical contact[2] with a confirmed or probable case MERS-CoV infection, while that patient was ill OR A healthcare facility in a country where hospital-associated MERS-CoV infections have been reported e.g. South Korea.

[1] Arabian peninsula and neighbouring countries include: Iraq, Iran, Bahrain, Israel, the West Bank, and Gaza; Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, The United Arab Emirates (UAE) and Yemen

[2] Close contact:

- Being within 2 meters/within the room or care area for a prolonged period of time (e.g health personnel, household members) while not wearing recommended personal protective equipment (gloves, gowns, N95 mask, eye protection); or
- Having direct contact with infectious secretions (e.g. being coughed on) while not wearing recommended personal protective equipment (gown, gloves, eye protection, N95 mask). Data on close contact is limited, currently brief interactions (walking past a person, are considered low risk and do not constitute close contact).

[3] A 'cluster' is defined as two or more persons with onset of symptoms within the same 14 day period, and who are associated with a specific setting, such as a classroom, workplace, household, extended family, hospital, other residential institution, military barracks or recreational camp.

A confirmed case: a PUI with a laboratory confirmation of infection with MERS-CoV.
A probable case: a PUI with absent or inconclusive results for MERS-CoV infection who is a close contact of a laboratory-confirmed case. Examples of inconclusive laboratory results are a negative test on an inadequate specimen or a positive test on an assay with limited performance data available.

Case definitions are a guide to who should be tested. Where there is doubt about clinical presentation or history, cases should be discussed with the Centre for Respiratory Diseases and Meningitis at the NICD-NHLS, through the NICD Hotline (082 8883 9920, a 24-hour service for healthcare professionals). Clinicians should be alert to the possibility of atypical presentations in patients who are immunocompromised.

Additional resources and updates:

- World Health Organization website: http://www.who.int/csr/disease/coronavirus_infections/en/index.html
- http://www.who.int/csr/bioriskreduction/infection_control/publication/en/
- CDC website: http://www.cdc.gov/coronavirus/index.html
- NICD website: http://www.nicd.ac.za

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

b Ebola virus disease (EVD) outbreak: update

Ebola virus disease (EVD) outbreak: situation update

The outbreak continues in the three affected countries (Guinea, Liberia and Sierra Leone). Of growing concern is the detection of new EVD cases from unknown chains of transmission, and the re-emergence of EVD cases in Liberia after it was declared Ebola-free on 09 May 2015. On 29 June 2015, a confirmed case of EVD was detected through the routine surveillance in Margibi County in Liberia – the first in the country since 20 March 2015. The case was a 17-year-old male who became ill on 21 June, died on 28 June and subsequently tested positive for EVD. As at 25 July 2015, a further five cases have been reported in Liberia.

As at 12 July 2015, a cumulative total of 27 642 cases (laboratory-confirmed, probable and suspected) including 11 261 deaths with a case fatality rate of 41% has been reported in Guinea, Liberia and Sierra Leone. A summary of case numbers and deaths reported is shown in Table 2.

On 12 May 2015, EVD was confirmed in a healthcare worker who returned to Italy from Sierra Leone. Italy was declared Ebola-free on 20 July 2015.

Table 2: Number of Ebola virus disease cases and deaths in Guinea and Sierra Leone as at 19 July 2015

Country	Total cases (laboratory-confirmed, probable and suspected)	Total deaths	Case fatality rate	Number of cases among healthcare workers (Number of deaths)
Guinea	3 783	2 512	66%	194 (97)
Sierra Leone	13 250	3 949	30%	307 (221*)
Liberia (as at 09 May)	10 666	4 806	45%	378 (192)
Liberia (from 29 June)	6	2	33%	-
Totals	**27 705**	**11 269**	**41%**	**879 (510)**

Source: World Health Organization Global Alert and Response: Ebola situation report of 22 July 2015 (www.who.int) . *Data as at 17 February

Situation in South Africa

As at 15 July 2015 there have been no EVD cases in South Africa associated with the current outbreaks in West Africa. In addition, there are no suspected cases of EVD in South Africa at present. The risk of Ebola being introduced into South Africa still remains low. However, a high index of suspicion is necessary given on-going EVD transmission in West Africa.

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.

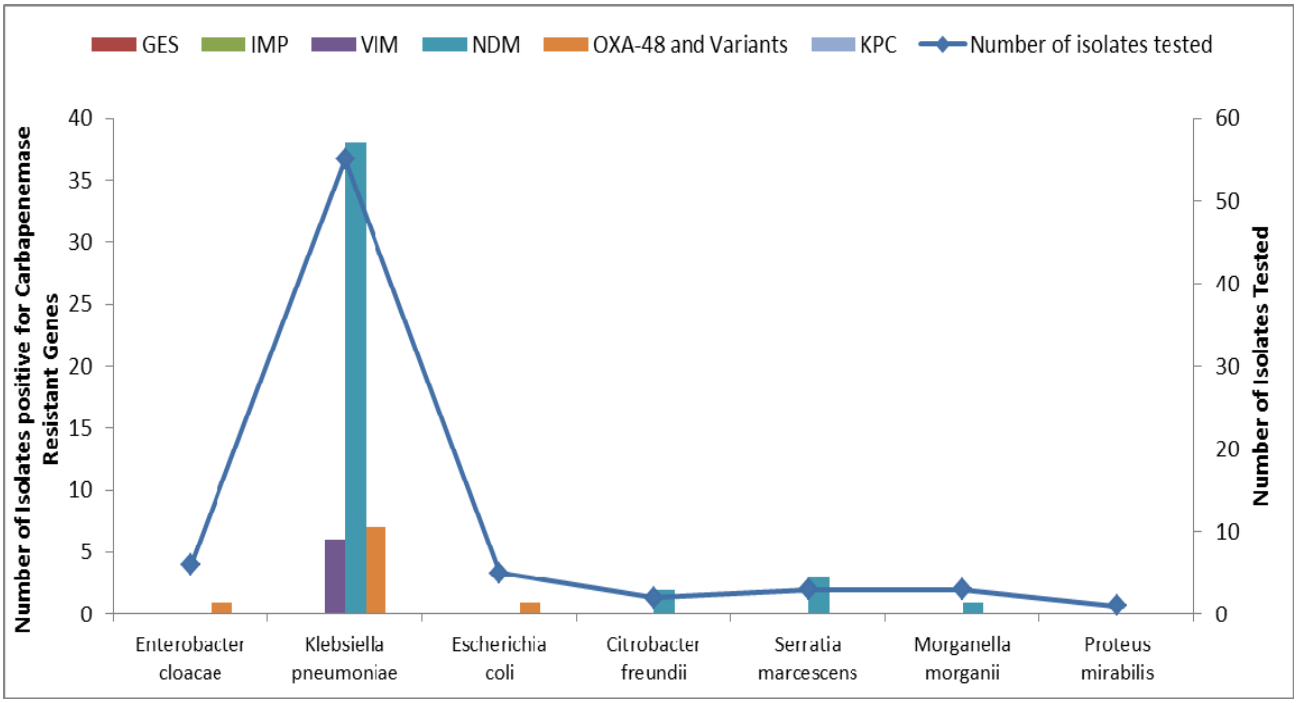
Requests for testing (with a detailed clinical, travel and exposure history) should be directed to the NICD Hotline at 082 883 9920 (a 24-hour service, for healthcare professionals only).

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

6 ANTIMICROBIAL RESISTANCE

Update on carbapenemase-producing Enterobacteriaceae

The Johannesburg Antimicrobial Resistance Laboratory- Culture Collection (AMRL-CC) of the Centre for Opportunistic, Tropical and Hospital Infections (COTHI) at the NICD-NHLS, tests referred isolates of suspected carbapenemase-producing Enterobacteriaceae (CPE) for the presence of selected carbapenemase genes. CPEs have become a threat to healthcare and patient safety worldwide by compromising empiric therapeutic antibiotic options and increasing morbidity, mortality, and healthcare costs. National CPE surveillance is necessary in order to determine the extent of the problem, and to inform strategies to restrain further spread of CPE in South Africa. For June 2015, a total of 80 Enterobacteriaceae isolates were received at AMRL-CC, NICD. Seventy-six carbapenem-resistant isolates were screened, 60 (79%) of which were CPE isolates. The majority of the isolates were *Klebsiella pneumoniae* (55/76, 72%) followed by *Enterobacter cloacae* (6/76, 8%) and *E. coli* (5/76, 7%) (Figure 2).

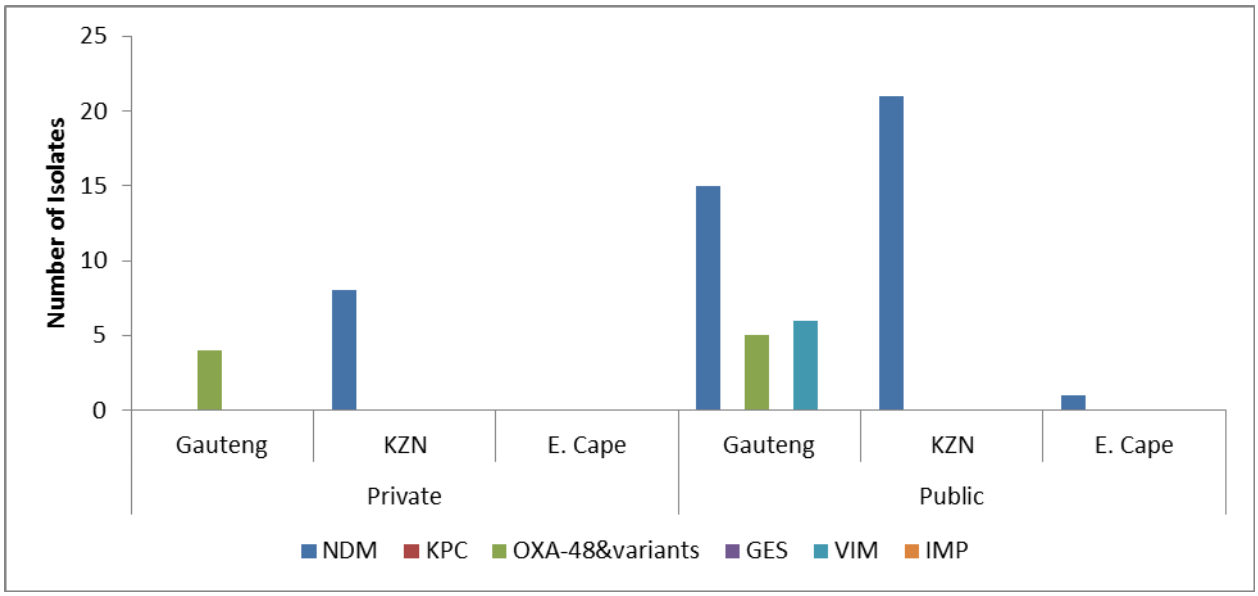


GES: Guiana extended-spectrum; IMP: imipenemase; VIM: verona integron-encoded metallo-beta-lactamase; NDM: New Delhi metallo-beta-lactamase; OXA: oxacillinase; KPC: Klebsiella pneumonia carbapenemase

Figure 2. Enterobacteriaceae isolates screened (n=76) and confirmed CPEs (n=60) at the Antimicrobial Resistance Laboratory-Culture Collection, COTHI (NICD-NHLS), June 2015

Forty-five *bla*NDM-positive isolates were identified: eight from private hospitals (all from KwaZulu-Natal Province (KZN)), and 37 from public hospitals (15 from Gauteng Province (GP), 21 from KZN and one from Eastern Cape Province). Nine *bla*OXA-48-positive isolates were identified: four from private hospitals in GP, and five from public hospitals in GP. Six *bla*VIM-positive isolates were identified from public hospitals in GP. No other CPE enzyme types were identified (Figure 3).

It is important to note that these figures only partly 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 comprehensive platform for appropriate surveillance reports, and therefore limited local data is publically 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 AMRL-CC, NICD/NHLS. Please telephone (011) 555 0342/44 or email olgap@nicd.ac.za for queries or further information.



GES: Guiana extended-spectrum; IMP: imipenemase; VIM: verona integron-encoded metallo-beta-lactamase; NDM: New Delhi metallo-beta-lactamase; OXA: oxacillinase; KPC: *Klebsiella pneumoniae* carbapenemase

Figure 3. The distribution of CPEs (n=60) by healthcare sector (public and private) and province, June 2015

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

7 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. Water and food borne diseases		
Cholera Dominican Republic Haiti Cuba	The number of cases has increased over recent weeks, linked to the trend of increasing case numbers reported in Haiti. A sustained trend of increased case numbers has been reported during 2015 to date (almost 17 000 cases since January). A laboratory-confirmed case was reported on 01 July 2015 of a UK holiday maker who was diagnosed on his return.	Advice to travellers: Prevention measures include consumption of safe water (bottled water with an unbroken seal, boiled water or water treated with chlorine tablets); strict washing of hands with soap and safe water, eating of well-cooked food only, and careful selection of fruit, eating only those that can be peeled.
2. Vector-borne diseases		
Dengue Americas and Asia	As of 21 July 2015, ongoing outbreaks or high rates of autochthonous transmission of dengue have been reported in the following countries of the Americas and Asia: North America: Mexico Central America: Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua Hispanic Caribbean: Dominican Republic, Puerto Rico English, French and Dutch Caribbean: Aruba, French Guiana, Guyana, St Martin Andean and Southern Cone: Brazil, Colombia, Peru, Argentina and Paraguay Asia: Malaysia, Philippines, Indonesia, India, Sri Lanka, Viet Nam	Refer to article on pages 4-5 of this Communiqué for further information.

Disease & countries	Comments	Advice to travellers
2. Vector-borne diseases (continued)		
Chikungunya Global	As of 21 July 2015, ongoing outbreaks or high rates of autochthonous transmission of chikungunya virus have been reported in the following countries of the Americas and Asia: North America: Mexico Central America: El Salvador, Guatemala, Honduras, Caribbean: French Guiana, Puerto Rico Andean and Southern Cone: Brazil, Colombia, Peru, Paraguay Asia: Malaysia, Philippines, Indonesia, India, Sri Lanka, Viet Nam	Chikungunya (like dengue fever) is a mosquito-borne viral infection transmitted by *Aedes* spp. mosquitoes, which bite mostly during the day. The incubation period is usually 3-7 days (range 1-12 days), and the illness is characterised by an abrupt onset of fever and arthralgia. Arthralgia is usually bilateral and symmetrical and is often severe and debilitating. Other symptoms may accompany the fever and arthralgia, including: headache, myalgia, arthritis, conjunctivitis, nausea, vomiting, and nonspecific maculopapular rash. Laboratory findings can include lymphopenia, thrombocytopenia, elevated creatinine, and elevated hepatic transaminases. Most chikungunya infections are self-resolving, but rare complications include bullous skin lesions, uveitis, retinitis, myocarditis, hepatitis, nephritis, meningoencephalitis, Guillain-Barré syndrome, and haemorrhage. There is no specific antiviral therapy, and treatment is symptomatic. Travellers should wear clothing that minimises skin exposure (i.e. long-sleeved shirts and long pants) during the day, and apply mosquito repellents to exposed skin or clothing.

References and additional reading:

ProMED-Mail (www.promedmail.org)
World Health Organization (www.who.int)
Centers for Disease Control and Prevention (www.cdc.gov)
European Centre for Disease Prevention and Control (www.ecdc.europa.eu)

Last accessed: 22 July 2015

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