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

Communicable Diseases Communiqué

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CONTENTS

1 VACCINE-PREVENTABLE DISEASES

Measles

Update on measles outbreak

As at 12 February 2015, there have been only three laboratory-confirmed measles cases with onset of illness in 2015. These cases were all from ZF Mgcawu District in Northern Cape Province. This follows 63 laboratory-confirmed measles cases reported in 2014 from Northern Cape and Gauteng provinces.

Laboratory-confirmed measles cases have not been reported from other provinces for 2015 to date. Nevertheless, a high index of suspicion should be maintained for new cases countrywide.

Any suspected measles case should have a serum sample collected and sent to the NICD for confirmatory testing, together with a completed case investigation form (available from NICD website under Measles FAQs: www.nicd.ac.za/assets/files/Measles%20Rubella%20case%20investigation%20form%20Mar%202014.pdf).

The measles vaccine history should be indicated on the case investigation form. Measles vaccines are routinely given as two doses, at 9 months and 18 months of age. Measles vaccines are safe and highly effective at preventing measles. If a dose has been missed, **it is never too late to catch up measles vaccination.**

Source: Centre for Vaccines and Immunology, and Division for Public Health, Surveillance and Response, NICD-NHLS; Department of Health - EPI and Communicable Diseases Directorates (National, Northern Cape Province and ZF Mgcawu District); World Health Organization

2 SOUTH AFRICAN PUBLIC HEALTH PROGRAMMES

a Cryptococcal disease screen-and-treat programme in the management of HIV

Cryptococcal disease screen-and-treat is recommended in the new national consolidated guidelines for the management of HIV

On 24 December 2014, the South African Department of Health published national consolidated guidelines for the prevention of mother-to-child transmission of HIV (PMTCT) and the management of HIV in children, adolescents and adults. These integrated guidelines harmonise recommendations across the continuum of HIV-related care for all age groups and populations.

Aspiring to fulfil the health department's 2020 targets of having 90% of the population tested for HIV, 90% of eligible HIV-infected persons on antiretroviral treatment (ART), and 90% of those on ART virally suppressed, these guidelines provide necessary clinical and programmatic guidance towards improved management of people living with HIV.

The 2014 guidelines reflect recent important advances in HIV management. Among these is the inclusion of new recommendations for routine screening and treatment of cryptococcal disease among ARV-naïve adults with CD4 counts <100 cells/µl. The recommendations are based on the World Health Organization 2011 guidelines as well as preliminary local data from the first phase of the cryptococcal disease screen-and-treat programme in South Africa (including sites in Western Cape, Gauteng and Free State provinces). Either clinician-initiated or reflex testing for cryptococcal antigenaemia (CrAg) is recommended, with testing performed in the laboratory. At the time of publication, reflex laboratory testing for CrAg was only available at three NHLS CD4 laboratories.

Clinical recommendations for CrAg-positive patients include further clinical investigation and management, antifungal treatment and optimal timing of ART (Figure 1):

- Patients with a positive cryptococcal antigen (CrAg) blood test have disseminated cryptococcal disease and should be **specifically** evaluated for symptoms/signs of meningitis.
- CrAg-positive patients with symptoms/signs should be referred for lumbar puncture (LP) to exclude cryptococcal meningitis. If cryptococcal meningitis is confirmed on LP, patients should be managed in hospital (for at least 2 weeks) and ART deferred for 4-6 weeks.
- CrAg-positive patients without symptoms/signs may be offered an LP, if this is immediately accessible, to exclude subclinical meningitis. For CrAg-positive patients without suspected meningitis, oral fluconazole (800mg daily for 2 weeks, followed by standard consolidation and maintenance treatment) is recommended, as well as for patients with an LP that is cryptococcal test-negative. For patients without signs or evidence of meningitis, ART is recommended to be started 2 weeks after anti-fungal therapy is initiated.

Of note are the following revised recommendations:

- Combination amphotericin B and fluconazole as induction treatment for patients with laboratory-confirmed cryptococcal meningitis.
- Timing of ART in cryptococcal disease. Defer ART for 4-6 weeks in patients with laboratory-confirmed cryptococcal meningitis, whilst ART can be commenced 2 weeks after antifungal therapy for CrAg-positive patients without signs or laboratory evidence of meningitis.

Further information can be accessed on the following websites:

- www.doh.gov.za
- http://www.nicd.ac.za/?page=communicable_diseases_surveillance_bulletin&id=45

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

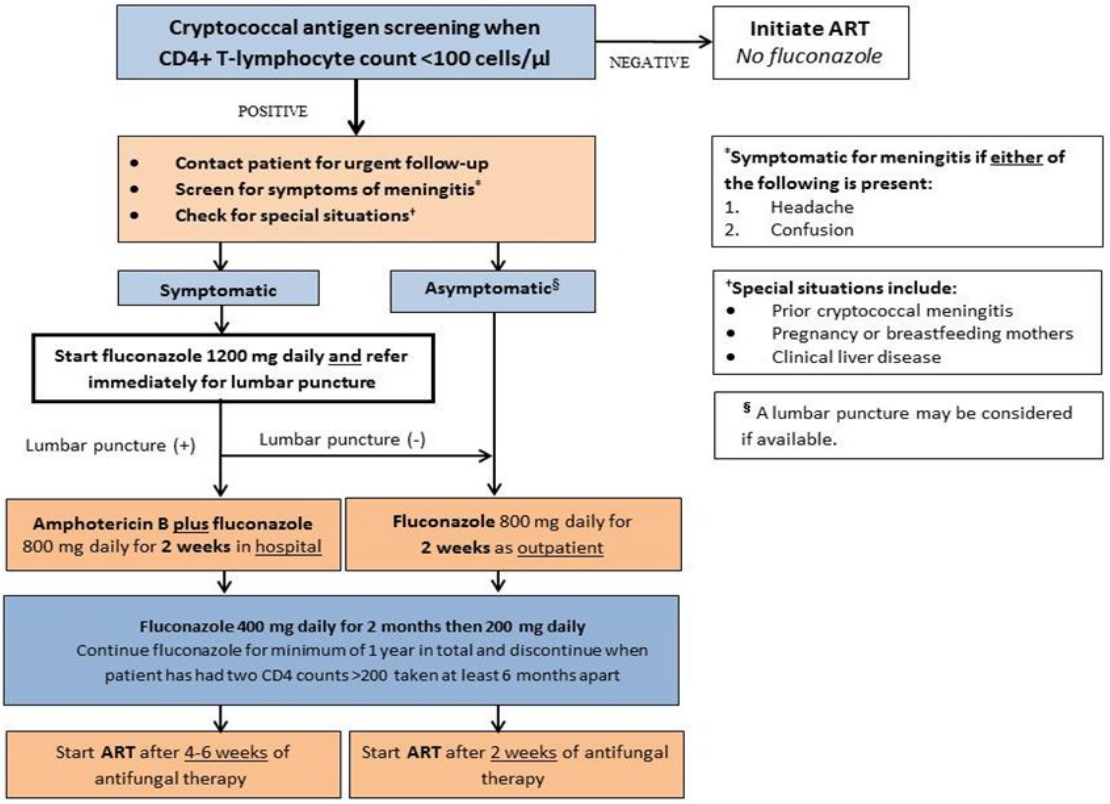

Figure 1. Algorithm for clinical management of disseminated cryptococcal disease

b National surveillance programme for congenital rubella syndrome

Roll-out of national congenital rubella syndrome surveillance programme

The NICD-NHLS is initiating a programme for national congenital rubella syndrome (CRS) surveillance. Initially, tertiary hospitals will serve as sentinel sites; however, clinicians, National Health Laboratory Services (NHLS) laboratories and private sector laboratories countrywide are invited and encouraged to participate.

Rubella (German measles) is caused by a togavirus. It is characterised by a mild maculopapular rash in most (50-80%) cases, which may lead to a misdiagnosis of measles or scarlet fever. Symptoms are usually mild, and up to 50% of rubella infections are subclinical. Rubella is transmitted through droplet spread of, or direct contact with, nasopharyngeal secretions. The incubation period is on average 14-17 days (range: 12-23 days). Persons are most infectious when the rash is erupting, but can shed virus from 7 days before to 7 days after the onset of the rash. Children usually develop few or no constitutional symptoms, whilst adults often experience a 1-5 day prodrome of low-grade fever, headache, malaise, coryza and mild conjunctivitis. Lymphadenopathy involving postauricular, occipital and posterior cervical glands may precede the rash by 5-10 days. The rash is erythematous and mostly seen behind the ears and on the face and neck. The rash may be fleeting, and is not specific to rubella; given the nonspecific nature of prodromal symptoms, clinical diagnosis of rubella on the basis of a rash with/without prodromal symptoms is therefore not reliable. Arthralgia or arthritis occurs frequently in adults, particularly among women (reported in up to 70% of women). Rare complications include thrombocytopenic purpura (approximately one in 3 000 cases) which is more likely to occur in children, and post-infectious encephalitis (one in 6 000 cases) which is more likely to occur in adults.

Whilst generally a mild, self-limiting illness, rubella can have serious consequences following maternal infection in pregnancy (especially during the first trimester). These include miscarriage, stillbirth and congenital rubella syndrome (CRS). CRS is a constellation of birth defects, most often affecting the eyes (e.g. cataracts, microphthalmia, glaucoma, pigmentary retinopathy, chorioretinitis), ears (e.g. sensorineural deafness), heart (e.g. peripheral pulmonary artery stenosis, patent ductus arteriosus, ventricular septal defects), and brain (e.g. microcephaly). In addition, infants with CRS often exhibit both intrauterine and postnatal growth retardation. Children with CRS can have serious

developmental disabilities (e.g. visual and hearing impairment) and have an increased risk of developmental delay, including autism. CRS can also increase the risk of endocrinopathies (including thyroiditis and insulin-dependent diabetes mellitus). The risk for congenital infection and CRS is highest during the first 12 weeks of gestation (including infection just before conception), with fetal defects occurring in up to 90% of surviving infants. The risk of birth defects decreases after the 12th week of gestation, declining to about 10-20% with infection occurring between 11 and 16 weeks gestation. After the 16th week of gestation fetal damage following infection is rare, although sensorineural deafness has been described following infections as late as 20 weeks of gestation. Infants moderately or severely affected by CRS may be more easily recognised at birth, but mild CRS (e.g. mild cardiac involvement or sensorineural deafness) may not be detected for months or years after birth, or not at all. Subclinical maternal infection can also cause CRS.

Virus detection and serologic testing can be used to confirm acute or recent rubella infection. Serologic testing for the detection of rubella-specific IgM is the most common diagnostic test for postnatal rubella. Congenital rubella infection and CRS can be diagnosed using serologic testing, with/without virus detection.

Rubella vaccination is not included in the South African Expanded Programme on Immunisation schedule, but is available in the private health sector (as the measles, mumps and rubella vaccine). As part of a global rubella elimination strategy, rubella immunisation may be introduced into many African countries (including South Africa) within the next few years One of the major concerns facing countries planning to include rubella-containing vaccines in their routine immunisation programmes is the 'paradoxical effect' following suboptimal rubella immunisation coverage in childhood, which may lead to an increased risk of maternal infection and subsequently an increased incidence of CRS. Low immunisation coverage in infants and young children might decrease their exposure to rubella virus during childhood; this in turn may lead to increased susceptibility in women of childbearing age compared with the pre-vaccine era, since this group of women have not been vaccinated or exposed to natural rubella infection. Preventing such a phenomenon requires high immunisation coverage (≥80%) in order to ensure adequate epidemiological control of circulating rubella virus.

The CRS surveillance programme aims to increase awareness and detection of CRS countrywide, and will provide valuable information regarding the burden of CRS in South Africa. Such information will be extremely important for monitoring CRS trends before, during and after roll-out of routine rubella immunisation.

If you are aware of any suspected or confirmed CRS case, please contact villyenm@nicd.ac.za. Should you be interested in actively participating in the CRS surveillance programme, please contact villyenm@nicd.ac.za.

Source: Centre for Vaccines and Immunology and Division of Public Health Surveillance and Response, NICD-NHLS

3 TRAVEL HEALTH

Recent amendments to yellow fever vaccination requirements for travellers to African countries at low risk for yellow fever transmission

The World Health Organization (WHO) International Health Regulations (2005) requires countries at risk of yellow fever introduction to employ the following measures:

1. Obtain vaccination certificates from individuals travelling from areas determined by the WHO to be at risk of yellow fever transmission.
2. Disinfect aircraft, ships, tyre-casing consignments and other modes of transportation coming from a yellow fever risk area.

At their 136th session meeting in Geneva which took place at the end of January 2015, the WHO Executive Board conducted a review of countries with risk of yellow fever transmission during. Based on area-specific data for risk of yellow fever virus transmission, the board classified Zambia, Tanzania, Eritrea, Somalia, São Tomé and Prìncipe as yellow fever low-risk countries (Figure 2). The board also recommended that all travellers from these countries should no longer be required to produce a proof of vaccination certificate against yellow fever upon arrival at countries at risk for yellow fever introduction. In line with this recommendation, the South African Ministry of Health announced on 03 February 2015 that with immediate effect yellow

fever vaccination certificates will no longer be required at South African ports of entry for travellers arriving from these countries.

In line with the International Health Regulations (2005), South Africa requires a valid yellow fever certificate from all citizens and non-citizens (over one year of age) travelling from a yellow fever risk country. Vaccination certificates are routinely checked at the South African port of entry for travellers arriving from countries designated as high risk for yellow fever transmission. Persons who have been in transit exceeding 12 hours through the airport of a country with high risk of yellow fever transmission are also required to produce a proof of vaccination certificate upon arrival. If the traveller is unable to produce a valid yellow fever vaccination certificate at the point of entry, entry will be refused and the traveller will be placed under quarantine surveillance until their certificate becomes valid, or be quarantined for a period not exceeding six days. For travellers who are in possession of an exemption certificate due to medical reasons they will be allowed entry, be placed under quarantine and/or will be required to report any fever or other symptoms to health authorities.

Travellers must also take note of the following considerations with regards yellow fever vaccination:

- Yellow fever vaccine should be administered at least 10 days prior to departure (to allow for production of protective antibodies following vaccination)
- Yellow fever vaccination certificates are valid for 10 years
- Vaccine is contraindicated in pregnant women, infants <9 months, individuals with egg allergies, and certain immunosuppressed individuals (including HIV-infected persons with CD4 counts <200/mm^3). These individuals still require a health certificate indicating the reason for non-receipt of vaccine.
- Vaccinated travellers should still take precautionary measures to avoid being bitten by mosquitoes. This will ensure additional protection not only against yellow fever, but also against a number of other endemic mosquito-borne infections (e.g. malaria, dengue).

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

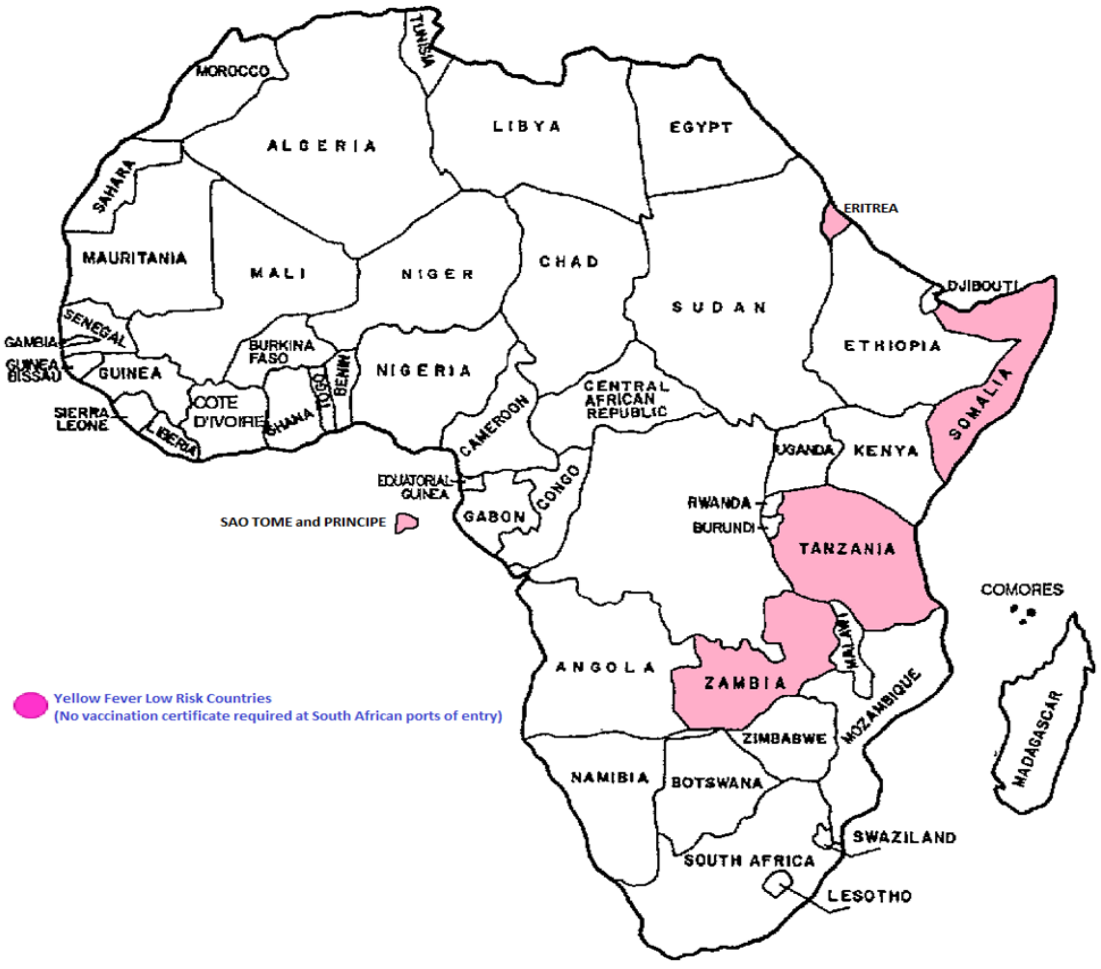

Figure 2. African countries at low risk for yellow fever transmission

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

Update on Ebola virus disease

All three affected countries with widespread and intense transmission (Guinea, Liberia and Sierra Leone) continue to report new cases and deaths. However, Liberia is reporting low numbers of new confirmed EVD cases. The imported EVD case-patient who was confirmed on 29 December 2014 in Glasgow, United Kingdom (UK) was discharged from hospital on 24 January 2015. The case-patient tested negative twice for EVD on 23 January 2015.

1. Countries with widespread and intense transmission

As at 08 February 2015, a cumulative total of 22 859 EVD cases (laboratory-confirmed, probable and suspected) including 9 162 deaths with a case fatality rate of 40% has been reported in Guinea, Liberia and Sierra Leone. A summary of case numbers and deaths reported is shown in Table 1.

Table 1. Number of Ebola virus disease cases and deaths in Guinea, Liberia and Sierra Leone as at 08 February 2015

Country	Total cases (laboratory-confirmed, probable and suspected)	Total deaths	Case fatality rate	Number of cases among healthcare workers (number of deaths)
Guinea	3 044	1 995	66%	166 (88)
Liberia	8 881	3 826	43%	371 (179)
Sierra Leone	10 934	3 341	31%	293 (221)
Total	**22 859**	**9 162**	**40%**	**830 (488)**

2. Countries with an initial case or cases, or with localised transmission

To date six countries (Nigeria, Senegal, Spain, United States of America (USA), Mali and UK) have reported localised transmission or imported a case or cases from Guinea/Liberia/Sierra Leone. The EVD outbreaks in Nigeria, Senegal, Spain, USA and Mali have been declared over. Table 2 summarises the status of the outbreak in the UK.

Table 2. Number of Ebola virus disease cases and deaths in the United Kingdom as at 08 February 2015

Country	Total cases (laboratory-confirmed, probable and suspected)	Total deaths	Number of cases among healthcare workers (number of deaths)
United Kingdom	1	0	1 (0)

Situation in South Africa

As at 11 February 2015 there have been no EVD cases in South Africa associated with the current outbreak 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 remains low.

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 a compatible travel history. The tests cannot be used to determine if a person 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

5 ANTIMICROBIAL RESISTANCE

Update on carbapenemase-producing Enterobacteriaceae

The Johannesburg and Cape Town Antimicrobial Resistance Laboratories of the Centre for Opportunistic, Tropical and Hospital Infections (COTHI) at the NICD/NHLS offer testing of referred suspected carbapenemase-producing Enterobacteriaceae (CPE) isolates for the presence of selected carbapenemase genes. For January 2015, a total of 42 Enterobacteriaceae isolates was received. Thirty-eight isolates were screened, of which 26 (68%) were found to be carbapenemase-producing Enterobacteriaceae. Four isolates were not processed due to technical issues. Of the Enterobacteriaceae isolates screened, *Klebsiella pneumoniae* (18/38, 47%) and *Enterobacter cloacae* (7/38, 18%) were the most common organisms (Figure 3).

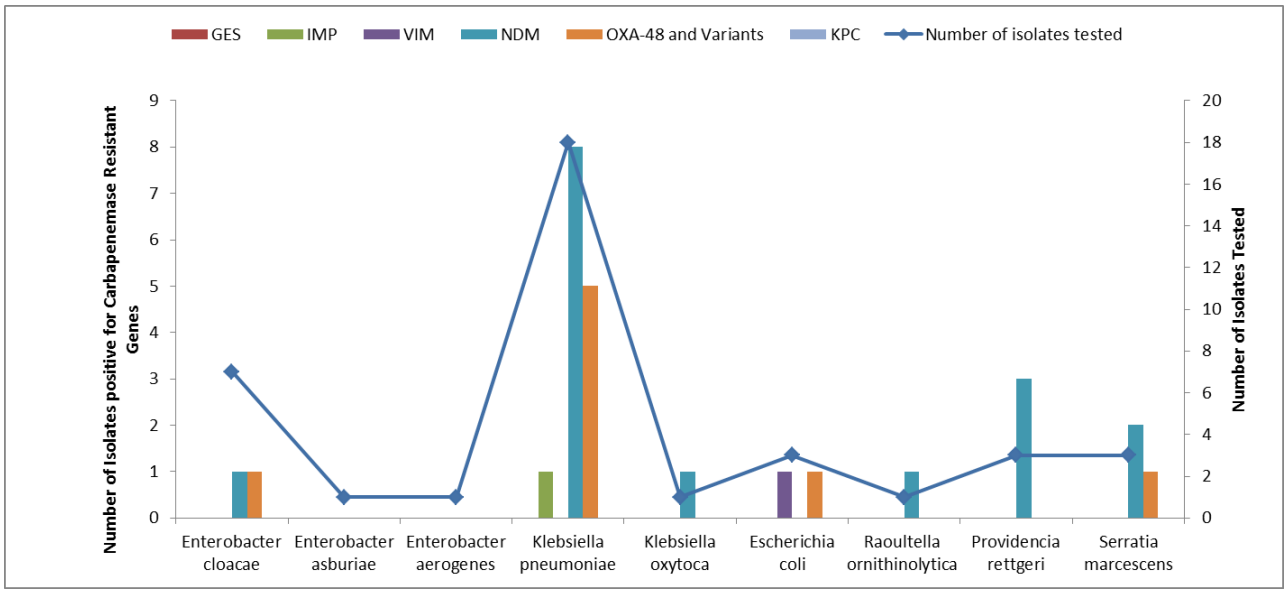

Figure 3. Enterobacteriaceae isolates screened (n=38) and confirmed CPE (n=26) during January 2015 at the Antimicrobial Resistance Laboratories, COTHI (NICD-NHLS)

Sixteen *bla*$_{NDM}$-positive isolates were identified: six from private hospitals in KwaZulu-Natal Province and ten from public hospitals (seven in Gauteng Province and three in Western Cape Province). Eight *bla*$_{OXA-48}$-positive isolates were identified: five from private hospitals (four from a single site in Gauteng Province, and one from KwaZulu-Natal Province). A further three *bla*$_{OXA-48}$-positive isolates from public hospitals were identified, one from Eastern Cape Province and two from Western Cape Province. A single *bla*$_{VIM}$-positive isolate and a single *bla*$_{IMP}$-positive isolate, both from the public sector in Gauteng Province, were also identified (Figure 4). 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 COTHI.WC@NHLS.AC.ZA.

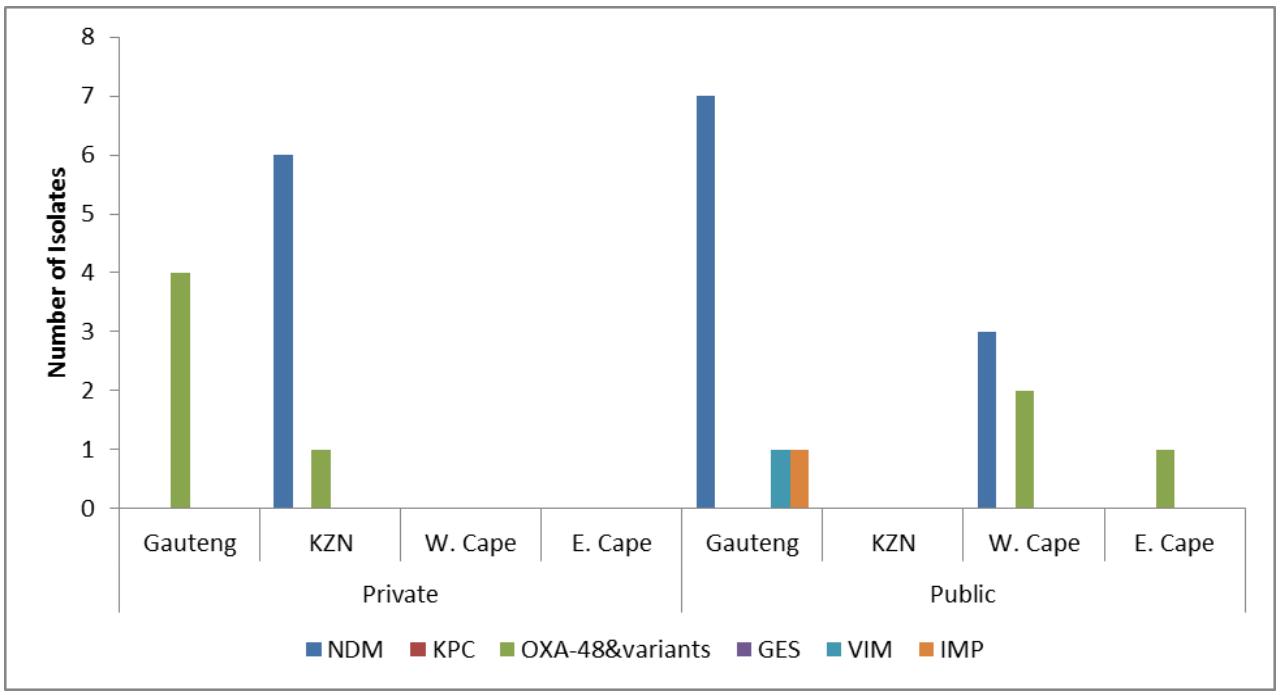

Figure 4. Distribution by province of confirmed CPEs (n=26), January 2015

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. Water- and food-borne diseases		
Cholera		
Dominican Republic	597 cases of cholera including 10 deaths were reported in 2014. Sixteen suspected cases have been reported since the beginning of 2015	
Mozambique	The cholera outbreak began during December 2014 in Nampula Province. As of 30 January 2015, a total of 544 cases has been identified.	Cholera is an acute diarrhoeal illness that causes severe dehydration. Drink lots of safe water (bottled water with an unbroken seal, boiled water, or water treated with chlorine tablets). Conscientious washing of hands with soap and safe water must be practiced. Food must be well-cooked before eating. Peel fruit and vegetables before eating.
Nigeria	Since being reported during December 2014, the cholera outbreak has involved a number of states including Enugu, Rivers and Bayelsa. As of 05 January 2015, a total of 171 cases has been identified, and at least 29 deaths reported.	
2. Respiratory diseases		
MERS-CoV		
Saudi Arabia	As of 07 February 2015, Saudi Arabia reported 10 new cases including one death.	Good hygiene and basic infection prevention measures should be practiced. 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 well-cooked.

Disease & countries	Comments	Advice to travellers
2. Respiratory diseases (continued)		
Avian influenza		
China (H7N9)	On 07 February 2015, China reported a total of 562 human cases.	Travellers to countries with known outbreaks of avian influenza should avoid exposure to poultry. Avoid poultry farms, entering areas where poultry may be slaughtered, avoid live bird markets, and avoid contact with any surfaces that may be contaminated with poultry faeces.
Egypt (H5N1)	Since 26 January 2015, Egypt has reported at least 24 new laboratory-confirmed human cases and 11 deaths.	

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: 08 February 2015

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