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1 SEASONAL DISEASES

a Influenza

Data from two influenza surveillance programmes (the Viral Watch programme, which monitors influenza-like illness (ILI), and the severe acute respiratory illness (SARI) programme, which monitors severe disease in hospitalised patients), show that during the 2013 influenza season the predominant circulating influenza subtype was influenza A(H1N1)pdm09. The season started in epidemiologic week 17 (week ending 28 April 2013), peaked in week 24 (week ending 16 June 2013) and ended in week 41 (week ending 6 October 2013).

In the first five weeks of 2014, ten specimens were received from Viral Watch sites; influenza A(H3N2) was detected in one patient from Western Cape Province who had been in contact with travellers from Russia, and influenza B in a patient from KwaZulu-Natal Province who had no travel history. Influenza A(H1N1)pdm09 was detected in a patient from Eastern Cape Province who had recently returned from Germany. In addition, eight patients were tested at time of entry into South Africa

following travel abroad and 3 have tested positive for influenza.

In this same time period, 77 patients with SARI were identified at the four sentinel sites. Influenza has not been detected in any of these specimens. However, 42 other respiratory viruses were detected in the specimens of 37 patients; rhinovirus being the most common (20/42, 48%) followed by RSV (9/42, 21%) and adenovirus (7/42, 17%).

The start of the annual influenza season in South Africa has typically been defined as the week during which the influenza detection rate has risen above 10% and is sustained at $\geq 10\%$ for two consecutive weeks or more.

Recommended composition of influenza virus vaccine for use in the 2014 southern hemisphere influenza season

The following strains have been recommended by the World Health Organization (WHO) for inclusion in the 2014 southern hemisphere influenza vaccine:

- * an A/California/7/2009 (H1N1)pdm09-like virus^a
- * an A/Texas/50/2012 (H3N2)-like virus^b
- * a B/Massachusetts/2/2012-like virus.

^a A/Christchurch/16/2010 is an A/California/7/2009-like virus.

^b A/Texas/50/2012 is an A(H3N2) virus that following adaptation to growth in eggs has maintained antigenic properties similar to the majority of recently circulating cell-propagated A (H3N2) viruses including A/Victoria/361/2011.

The WHO recommendations are available at:

http://www.who.int/influenza/vaccines/virus/recommendations/201309_recommendation.pdf?ua=1.

Indications for influenza vaccine

- * Persons (adults or children) who are at high risk for influenza and its complications because of underlying medical conditions and who are receiving regular medical care for such conditions, including: chronic pulmonary and cardiac diseases, chronic renal diseases, diabetes mellitus and similar metabolic disorders; individuals who are immunosuppressed (including HIV-infected persons with CD4 counts >100 cells/ μ l); and individuals who are morbidly obese (BMI \geq 40 kg/m²)
- * Pregnant women – irrespective of the stage of pregnancy
- * Residents of old-age homes, chronic care and

rehabilitation institutions

- * Children on long-term aspirin therapy
- * Medical and nursing staff responsible for the care of high-risk cases
- * Adults and children who are family contacts of high-risk cases
- * All persons aged >65 years
- * Any persons wishing to protect themselves from the risk of contracting influenza, especially in industrial settings, where large-scale absenteeism could cause significant economic losses.

Detailed recommendations on target groups, dosages and contraindications for the 2014 influenza vaccine will be published in the March issue of the South African Medical Journal (in press).

Timing of influenza vaccine availability

Influenza vaccine will be available at public sector clinics and private pharmacies from the beginning of March. Since it takes about two weeks after vaccination for protective antibodies to develop, it is recommended that people be vaccinated as soon as vaccine becomes available to ensure that they are protected before the influenza season starts.

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

2 VECTOR-BORNE DISEASES

a FOCUS FEATURE: Sindbis fever

Case report

A 14-year-old male residing in Johannesburg presented with a low-grade fever, and rash on his trunk, limbs and palms. He was receiving methotrexate and adalimumab (a TNF inhibitor) for rheumatoid arthritis. The rash was suggestive of Sindbis fever, with a characteristic appearance of pale halos surrounding papular lesions. He had been on a golf course in Johannesburg four days prior to the onset of illness; this was most likely where exposure to mosquitoes occurred. Serologic testing confirmed the clinical diagnosis with detection of anti-Sindbis virus antibodies by haemagglutination inhibition assay and IgM ELISA. The patient has made a complete recovery.

FOCUS ON SINDBIS FEVER

Sindbis fever is known to be endemic in South Africa, and is considered an underreported and underrecognised cause of rash-arthritis syndrome in our country.

Epidemiology

Sindbis virus was first isolated from *Culex* spp. mosquitoes collected in the village of Sindbis near Cairo in 1952. The same virus had already been isolated from a bird, but remained a 'virus without a disease' until the first description of clinical symptoms caused by a Sindbis virus infection was reported from Uganda in 1961. Sindbis virus is a mosquito-borne arbovirus, and is maintained in

nature through an avian-mosquito transmission cycle; the main vectors are *Culex* spp. and *Culiseta* spp. mosquitoes. Humans and other vertebrates are occasionally infected, but no person-to-person transmission has been documented. Sindbis virus is one of the most widely distributed arboviruses, with infections and epidemics reported in Africa, Eurasia (particularly Scandinavia and former Soviet Union countries) and Oceania (including Australia). The distribution of the virus is linked to the migration pathways of several species of birds.

Clinical features

The incubation period is short - usually less than seven days. Asymptomatic and subclinical disease is thought to be common. The most prominent clinical manifestations of Sindbis fever include fever, fatigue, maculopapular rash, and arthralgia with or without arthritis. Other symptoms include myalgia, headache and nausea. The rash usually occurs on the trunk and limbs and may be distinctive, with a pale 'halo' surrounding the erythematous lesions (Figure 1). Arthralgia/arthritis most often occurs in wrist, hip, knee and ankle joints. In children, the disease is usually mild and can present without any joint symptoms. Extra-articular symptoms usually resolve within 1-2 weeks, but joint symptoms can persist for months or years, and in rare cases can result in chronic arthritis. No fatal cases of Sindbis fever have been reported to date.

Laboratory findings

Full blood count, ESR and CRP parameters are usually normal and uninformative.

Diagnosis

The laboratory diagnosis of acute Sindbis fever is based primarily on the detection of Sindbis virus antibodies by haemagglutination inhibition assay or ELISA. The detection of IgM antibodies, or IgG seroconversion between paired samples which have been taken two weeks apart, indicates recent Sindbis virus infection. However, it has been shown that up to 60% of Sindbis fever patients do not have detectable IgM antibodies within the first week of illness, and IgM testing may need to be repeated in such instances. Reverse transcription PCR and virus isolation from a serum sample are additional tests that may be useful. The Centre for Emerging and Zoonotic Diseases, NICD-NHLS offers

testing for Sindbis fever.

Management

There is no specific antiviral treatment available for Sindbis fever. Treatment is symptomatic, and would include antihistamines for pruritic rashes and NSAIDs for joint symptoms.

Prevention

The only preventive measure when living in or travelling in a Sindbis fever endemic area is to avoid being bitten by mosquitoes.

Sindbis fever in South Africa

The first human cases of Sindbis fever in South Africa were diagnosed in 1963. Since then, Sindbis fever cases have been noted to occur annually during the summer across the central plateau, i.e. Gauteng, Free State and Northern Cape provinces, usually after heavy rainfall, which stimulates the expansion of the mosquito vector populations. A large epidemic in the Karoo and Northern Cape during 1974 affected thousands of people, and another large epidemic occurred in 1984 with hundreds of cases throughout the Pretoria-Witwatersrand area. For the period 2006-2010, a total of 229 laboratory-confirmed (IgM positive) Sindbis fever cases was documented by the Centre for Emerging and Zoonotic Diseases, NICD-NHLS. Most cases were diagnosed in March and April, corresponding to the period during which *Culex univittatus* mosquitoes are abundant across the central plateau. The majority (86%) of cases were from Free State, Gauteng and Northern Cape provinces; however, except for Limpopo Province, cases were also reported from the other provinces. Since West Nile virus transmission in South Africa also involves avian hosts and *Culex univittatus* mosquito vectors, West Nile virus and Sindbis virus may co-circulate and cause outbreaks of human infections at the same time. This phenomenon of dual West Nile virus and Sindbis fever outbreaks has been documented numerous times in South Africa: across the Highveld in 1967 and again in 1984, and in the Karoo (Northern Cape and Free State provinces) in 1974 and 1976.

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



Figure 1. Typical Sindbis fever rash with pale 'halos' surrounding erythematous lesions
Photo courtesy of the late Dr B. Miller's collection (Sizwe Hospital)

3 ZOO NOTIC DISEASES

a Rabies, Limpopo Province

Human rabies was confirmed as the cause of death in a 72-year-old male from Malamulele in the Vhembe District of Limpopo Province. The patient was bitten on his left hand by his neighbour's dog in November 2013; he was apparently trying to kill the dog because it had been unusually aggressive. The patient reportedly opted for traditional medicine intervention rather than rabies post-exposure prophylaxis (PEP) following the event. Three additional persons were reportedly bitten by the same dog, but had fortunately sought and received rabies PEP. The dog tested positive for rabies by rabies fluorescent antibody test on a brain specimen (Department of Agriculture, Forestry and Fisheries). The patient became ill on 17 January 2014, and was admitted with clinical signs of rabies on 22 January 2014. Rabies reverse transcription PCR testing on three saliva specimens was positive and confirmed the clinical diagnosis of rabies. The patient died on 26 January 2014.

In addition to this laboratory-confirmed case, a probable case of human rabies has also been reported from Limpopo Province. A 34-year-old male from the Thohoyandou area (Vhembe District) was bitten by a dog on 01 January 2014. The patient sustained a deep wound on his left middle finger, and presented the same day to a local healthcare facility where he received wound treatment and rabies vaccination was initiated. The patient received the complete four-dose course of rabies vaccine; however, he did not receive rabies immunoglobulin despite the injury clearly constituting a Category 3 exposure. The patient subsequently developed signs and symptoms suggestive of rabies, including headache, pain at the healed bite site, dizziness, vomiting, chest pain, and lethargy. During hospitalisation, the patient was noted to be confused, agitated, and hyperactive, and died a few days later on 03 February 2014. Two saliva specimens were

submitted for rabies investigation but were tested negative on RT-PCR. Unfortunately, no additional specimens or post-mortem specimens were available for testing. This case was categorised as probable rabies based on the clinical presentation and the dog bite exposure history. Ante-mortem laboratory investigation for rabies is not always definitive, especially (as in this case) when the patient has received rabies vaccination, since it may obscure the detection of rabies virus in peripheral specimens. The fluorescent antibody test performed on post-mortem brain specimen remains the gold standard for confirmation of rabies in all cases.

The two cases reported here are the only rabies cases documented for 2014 to date. Seven laboratory confirmed human rabies were recorded for 2013, originating from Limpopo Province (n=3), KwaZulu-Natal Province (n=1), Mpumalanga Province (n=1) and Free State Province (n=2). No human rabies cases had been reported from Limpopo Province for more than two decades until the province experienced an outbreak of rabies in dogs in 2005. A total of 30 human cases was recorded during this outbreak (21 confirmed, four probable and five suspected cases). Since then, an average of three laboratory-confirmed human rabies cases is reported from this province each year.

Bat exposures

On 13 January 2014 a juvenile bat was taken to a veterinary clinic in Kloof, KwaZulu-Natal Province. The animal had fallen from a tree at a private home in Pinetown. The bat was then cared for at the clinic. Two veterinary staff members were exposed to the bat, one of whom suffered a Category 3 bite wound on the lip. On 03 February 2014, the bat died and was submitted for laboratory testing. A brain specimen collected from the animal tested positive for lyssavirus antigen using the direct fluorescent antibody test. Subsequent PCR testing characterised the lyssavirus as Lagos bat virus. Both exposed staff members were previously immunised against rabies, and therefore received rabies booster vaccinations.

Rabies can be caused by infection with any member of the *Lyssavirus* genus. Currently, there are at

least eleven formally acknowledged *Lyssavirus* species. The most important lyssavirus from a global public health perspective remains the classic rabies virus, which occurs most commonly in the developing world and is usually associated with domestic dogs. Classic rabies virus has not been reported from any bat species in Africa (including South Africa), but is commonly found in insectivorous bats in the Americas.

Three rabies-related lyssaviruses have been reported from South Africa: Duvenhage virus, Mokola virus and Lagos bat virus. Duvenhage virus has been identified in three human rabies cases since 1970 (two from South Africa in 1970 and 2006 respectively, and one from Kenya in 2007). The epidemiology of the disease remains obscure, but it is most likely linked to an insectivorous bat host. Mokola virus has been reported from a variety of animals including dogs, cats and shrews in sub-Saharan Africa, but no human cases have been reported; the natural reservoir of this virus is unknown. Lagos bat virus is usually associated with fruit-eating bats, and in South Africa most bat cases have been detected in KwaZulu-Natal Province (most likely due to a provincial bias in bat rabies surveillance activities). Nevertheless, bats are considered an uncommon source of rabies in South Africa.

Exposures to bats are considered category 3 exposures in all cases, regardless of whether there are visible injuries or not. Rabies immunoglobulin plus vaccination should be provided irrespective of the nature of the bat exposure.

Source: Centre for Emerging and Zoonotic Diseases and Division of Public Health Surveillance and Response, NICD-NHLS; Department of Agriculture, Forestry and Fisheries; Allerton Veterinary Laboratory, Pietermaritzburg, KwaZulu-Natal Province; Agriculture Research Council, Onderstepoort Veterinary Institute, Pretoria; Department of Microbiology and Plant Pathology, University of Pretoria

4 FOOD- AND WATER-BORNE DISEASES

a Foodborne disease outbreak: Limpopo Province

On 22 January 2014, 36 healthcare workers attending a workshop at a lodge in Mokopane (Waterberg District, Limpopo Province) presented with abdominal cramps, diarrhoea and fever, and were taken to Voortrekker Hospital for management. Of these, seven patients were admitted for further investigation. The onset of gastrointestinal symptoms in most case-patients occurred a day after eating all meals together at the training venue: breakfast and dinner were provided by the lodge's in-house kitchen, with tea and lunch being provided by an external caterer. Stool samples were collected from eight case-patients. Non-typhoidal *Salmonella* spp. was isolated from four stool samples; further characterisation of three available isolates at the Centre for Enteric Diseases (NICD-NHLS) showed them all to be *Salmonella* Enteritidis. There were no food retention samples or representative leftovers from any of the meals served during the training workshop. A non-

implicated food sample and water samples taken at the lodge were tested at a private laboratory and no pathogens were identified. Environmental health practitioners conducted audits of the lodge and external caterer's food preparation facilities and food handling practices. Potential hazards for cross-contamination of food items were identified at both facilities. Health education regarding safe food handling and preparation practices was given to the in-house kitchen and external caterer staff.

The epidemic curve shown in Figure 2 corroborates the point source nature of the outbreak, and illustrates the peak onset of symptoms at midnight, 22 January 2014. Given that the median incubation period for foodborne non-typhoidal salmonellosis is 6-48 hours (but may be as long as 72 hours in some cases), any of the meals served on 21 January 2014 could potentially have been the source of infection.

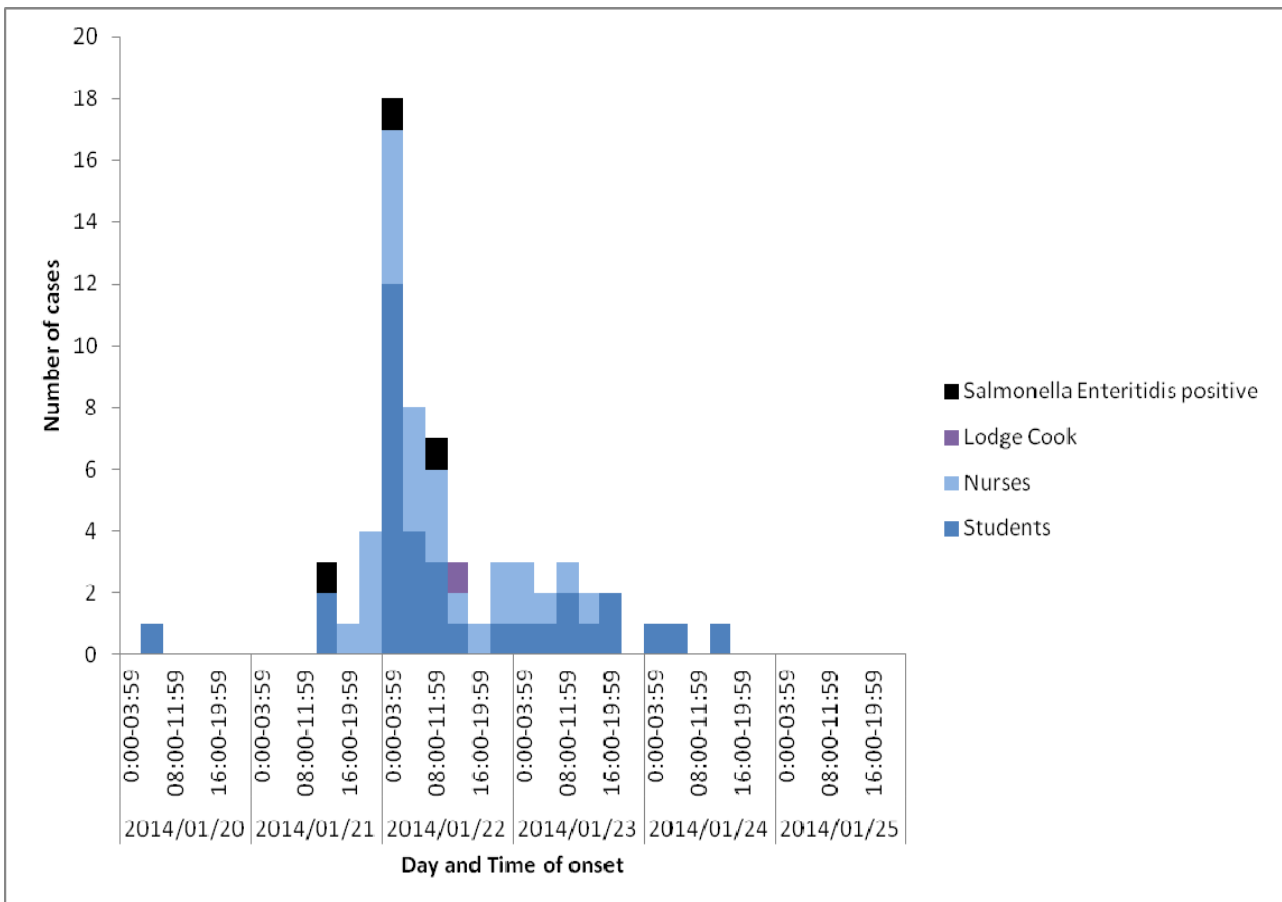


Figure 2. Foodborne disease outbreak in Mokopane (Limpopo Province), January 2014: epidemic curve of cases by date and time of symptom onset

Although foodborne disease outbreaks caused by *S. Enteritidis* have classically been associated with eggs and poultry products (chicken and turkey), a wide range of food commodities have been linked with *S. Enteritidis* outbreaks, including: beef, cheese, ice cream, pine nuts, raw almonds, raw sprouts, cream cakes and puddings. Eggs are common ingredients in many food commodities (e.g. sauces, mayonnaise, lasagne, pastries and other bakery items, ready-to-eat and frozen foods) so the potential for outbreaks due to contaminated eggs is amplified and complicates outbreak source attribution.

Healthcare workers are reminded that a suspected foodborne disease outbreak is defined as the occurrence of ≥ 2 epidemiologically-linked cases presenting with acute vomiting, diarrhoea, or

abdominal pain. Epidemiological linkage is inferred when the case-patients have consumed common foodstuffs/beverages. A suspected foodborne disease outbreak constitutes a category A notifiable medical condition in South Africa, and must be reported to the relevant health authority telephonically within 24 hours for appropriate public health response to occur.

The National Department of Health has published clinical guidelines on management and control of infectious foodborne diseases in South Africa, which can be downloaded at: www.health.gov.za/docs/Policies/2012/fooddisease.pdf.

Source: Source: Outbreak Response Unit, SA-FELTP, and Centre for Enteric Diseases, NICD-NHLS; Limpopo Province Department of Health

5 ANTIMICROBIAL RESISTANCE

a Update on carbapenemase-producing Enterobacteriaceae

The Johannesburg and Cape Town Antimicrobial Resistance Reference Laboratories (AMRRL) of the Centre for Opportunistic, Tropical and Hospital Infections (CO THI) at NICD/NHLS have been testing referred isolates of suspected carbapenemase-producing Enterobacteriaceae (CPEs) for the presence of selected carbapenemase

genes. For January 2014, a total of 62 isolates were screened, 44% (27/62) of which were carbapenemase-producing Enterobacteriaceae. The most common isolates referred for testing were *Klebsiella pneumoniae* (60%, 37/62) and *Enterobacter cloacae* (27%, 17/62) (Figure 3).

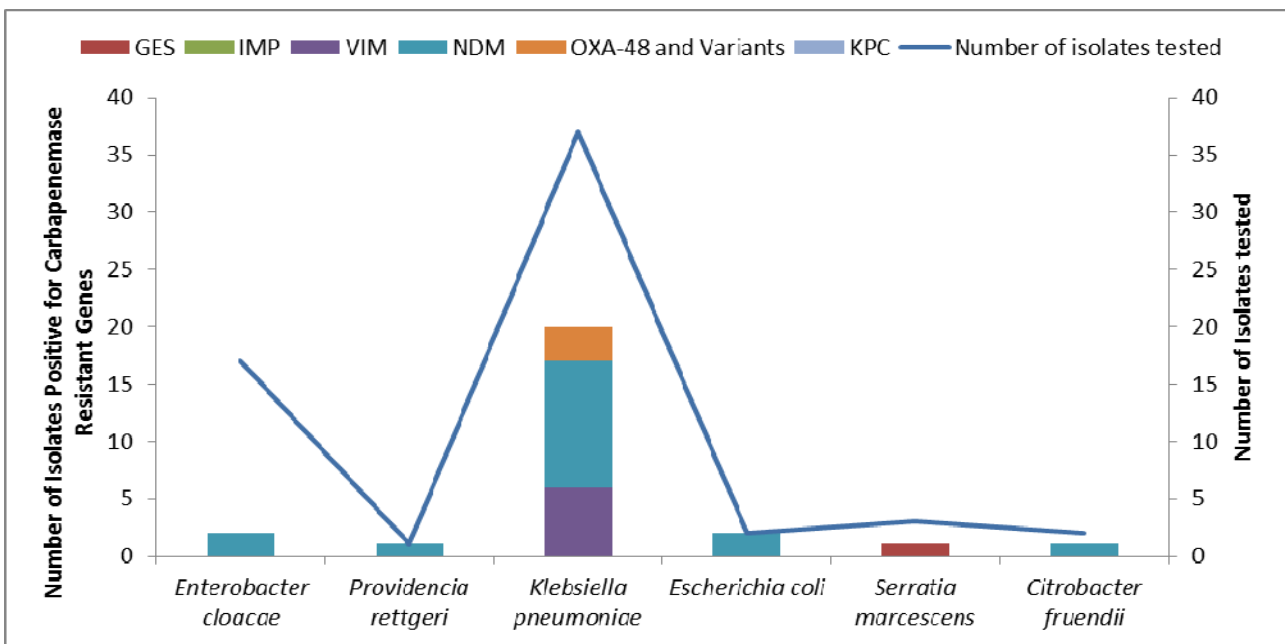


Figure 3. Enterobacteriaceae isolates screened (n=62) and confirmed CPE (n=27), January 2014, AMRRL (NICD-NHLS)

Seventeen NDM-positive isolates were identified (6 from private hospitals in KwaZulu-Natal Province and 11 from public hospitals in Gauteng Province). Three OXA-48-positive isolates from one private hospital in Gauteng Province were identified. Six

VIM-positive isolates and one GES-positive isolate were identified from the public sector and private sector respectively, all in Gauteng Province (Figure 4).

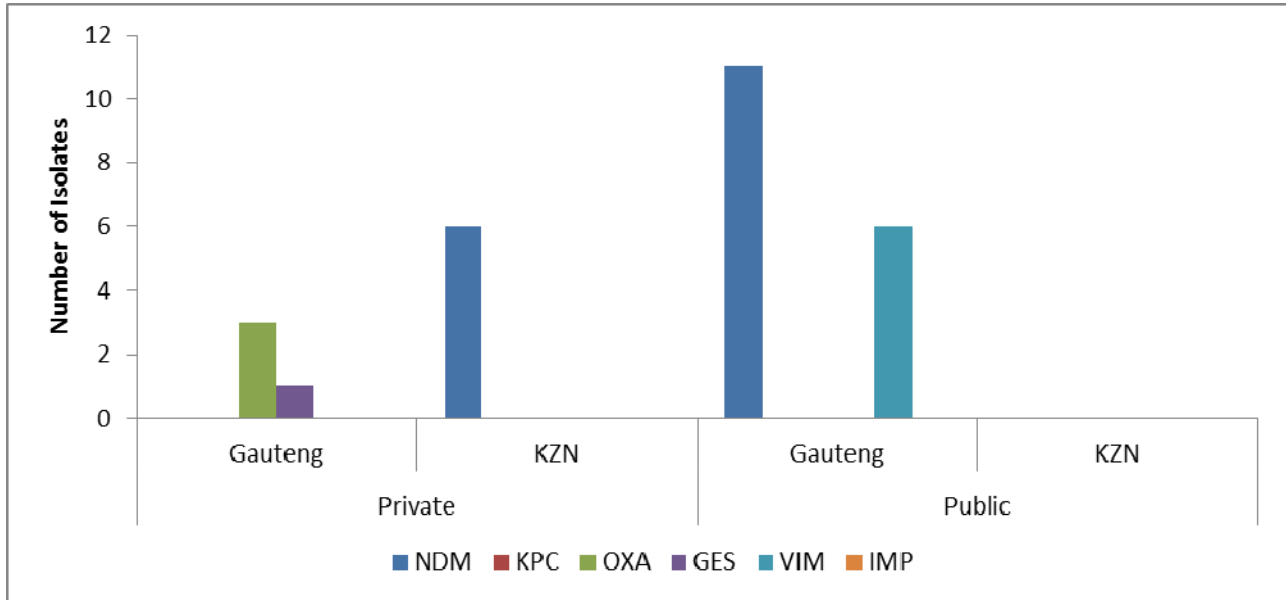


Figure 4. Laboratory-confirmed CPE isolates (n=27) per province and healthcare sector, January 2014, AMRRL (NICD-NHLS)

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: clintonmoodley@yahoo.com; clinton.moodley@nhls.ac.za; and colleen.bamford@nhls.ac.za.

Source: Source: Centre for Opportunistic, Tropical and Hospital Infection, 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. <u>Vector-borne diseases</u>		
<u>Chikungunya</u>		
Caribbean (British Virgin Islands)	St Martin Island: 50 confirmed cases; Martinique Island: some cases confirmed, no further information.	Chikungunya and dengue fever are mosquito-borne viral infections transmitted by <i>Aedes</i> spp. mosquitoes, which bite mostly during the day.
Dominica	13 confirmed cases.	
Uganda	A few cases reported, numbers unknown.	
<u>Dengue fever</u>		
<u>Africa</u> : Tanzania (Dar es Salaam)	21 hospitalised cases this year to date.	Travellers should wear long-sleeved shirts and long pants during the day, and stay in well-ventilated (fan/air-conditioned) rooms where possible; use mosquito repellents containing DEET to avoid being bitten.
<u>Asia</u> : Malaysia	835 cases since 01/01/2014.	
Phillipines	23 cases in evacuees displaced by clashes between government and Liberation fighters	
<u>Pacific</u> : Australia (Queensland)	Cairns: 59 cases; Port Douglas: 17 cases and rising.	
Vanuatu (National)	313 confirmed cases with spread to Sano Island and Luganville Town: 71 cases and rising.	
<u>Americas</u> : Costa Rica	791 cases.	
Panama	1 703 cases, including 6 deaths.	

Disease & countries	Comments	Advice to travellers
1. <u>Vector-borne diseases (continued)</u>:		
<u>Hantavirus</u> Panama	9 cases since 01/01/2014.	Hantaviruses that cause hantavirus pulmonary syndrome (HPS) are carried by certain rats and mice. HPS is a severe and sometimes fatal respiratory disease. Coming into contact with rat urine, droppings or saliva can pose a risk of virus transmission. Avoid contact with rodents.
<u>Zika Virus</u> French Polynesia and New Caledonia	Since 03/02/2014: 49 lab confirmed cases in New Caledonia, 30 of whom had a travel history to French Polynesia, where there is an ongoing outbreak.	<p>Zika virus is a viral infection transmitted by <i>Aedes</i> spp. mosquitoes, which bite mostly during the day.</p> <p>Travellers should wear long-sleeved shirts and long pants during the day and stay in well-ventilated (fan/air-conditioned) rooms where possible; use mosquito repellents containing DEET to avoid being bitten.</p>
<u>Leptospirosis</u> United Kingdom	A 7-year-old boy has died after consuming floodwater possibly contaminated with rat urine. He developed Weil's disease, a severe form of leptospirosis. Sixteen other cases have also been reported, including the boy's father. The situation is as a consequence of current flooding.	Leptospire bacteria are spread through the urine of infected carrier animals, and once in water or soil can survive there for weeks to months. The most important animal reservoirs are rodents and other small animals, but livestock and companion animals may also be infected. Human infection occurs by direct contact with infected urine or animal tissues, or more commonly by indirect exposure to the organisms in damp soil or water. Travellers are advised to avoid travel to flooded areas.
<u>American trypanosomiasis (Chagas' disease)</u> Venezuela	175 cases reported between 12 and 18 January 2014, compared to a total of 4 cases in January 2013.	<i>Trypanosoma cruzi</i> is transmitted to animals and people by various triatomine insects ('kissing bugs'), and is found only in the Americas (predominantly in rural areas of Latin America). Persons travelling in endemic areas should avoid sleeping in dilapidated dwellings, apply insect repellent containing DEET, and use bed nets to avoid being bitten.
<u>Cutaneous leishmaniasis</u> Pakistan	254 cases this year to date.	<i>Leishmania</i> spp. parasites are spread by the bite of phlebotomine sand flies. Avoid outdoor activities, especially from dusk to dawn, when sand flies are generally most active. Minimise the amount of exposed (uncovered) skin, apply insect repellent containing DEET, and use bed nets to avoid being bitten.

Disease & countries	Comments	Advice to travellers
2. <u>Water- and food-borne diseases</u>		
<p><u>Cholera</u> Africa: Namibia (Kunene Region)</p> <p>Nigeria (Benue State)</p> <p><u>Middle East:</u> Iran</p>	<p>As of 05/02/2014, 453 cases including 15 deaths have been reported. The outbreak started in November 2013.</p> <p>The cholera outbreak which began in November 2013 is ongoing. Approximately 30 deaths have been reported to date.</p> <p>170 cases since September 2013, mostly affecting illegal immigrants from neighbouring countries.</p>	<p>Drink and use safe water (bottled water with an unbroken seal, boiled water or water treated with chlorine tablets).</p> <p>Wash hands with soap and safe water often. Eat hot well-cooked food, peel fruits and vegetables.</p> <p>Vaccines offer delayed and incomplete protection and should therefore not be used as a substitute for good hygiene and infection prevention practice.</p>
<p><u>Norovirus</u> Caribbean (cruise ship)</p>	<p>178 passengers and 11 crew members were affected, and the cruise was ended early.</p>	<p>Norovirus is transmitted by contaminated food or water, and person-to-person spread. Outbreaks on cruise ships are well described. Wash your hands carefully with soap and water, especially after using the toilet and changing diapers, and always before eating, preparing, or handling food. Wash fruits and vegetables and cook seafood thoroughly. When you are sick, do not prepare food or care for others who are sick. Clean and disinfect contaminated surfaces.</p>
3. <u>Respiratory viruses</u>		
<p><u>Influenza</u> North America</p> <p>China</p> <p>Globally</p>	<p>Influenza A(H1N1)pdm09 has been the predominant subtype detected, and seems to be affecting mostly persons aged 20 to 40, i.e. younger age groups than would be expected. Seven deaths have been reported.</p> <p>Activity has been increasing with influenza A(H1N1)pdm09, A(H3N2) and influenza B co-circulating.</p> <p>Activity remains low for the rest of the northern hemisphere as well as the southern hemisphere. In countries of tropical areas variable influenza activity has been reported.</p>	<p>Northern hemisphere-formulation influenza vaccines are not available in South Africa.</p>

Disease & countries	Comments	Advice to travellers
3. <u>Respiratory viruses (continued)</u>		
<p><u>MERS-CoV</u> <u>Middle East:</u> Jordan, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE).</p> <p><u>Europe:</u> France, Germany, Italy, United Kingdom</p> <p><u>Africa:</u> Tunisia</p>	<p>Middle East respiratory syndrome coronavirus (MERS-CoV) infection was first reported in Saudi Arabia in 2012. Most confirmed cases of MERS-CoV infection developed severe acute respiratory illness.</p> <p>At present, the route of transmission to humans and types of exposures that result in infection are not known.</p> <p>Since September 2012 until 07/02/2014 there have been 182 cases and 79 deaths.</p>	<p>Good hygiene and basic infection prevention practices can minimise risk of respiratory infections in travellers:</p> <ul style="list-style-type: none"> • 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. <p>Travellers should contact a medical practitioner if they develop acute respiratory symptoms upon return from a known risk area.</p>
<p><u>Avian influenza A</u></p> <p><u>H7N9</u> China</p> <p><u>H5N1</u> China, Canada, Vietnam</p> <p><u>H9N2</u> China</p>	<p>Human cases were first reported in March 2013, and sporadic cases continue to occur. According to WHO, 180 confirmed human cases including 33 deaths have been reported since 01/01/2014. Cases have now been reported in Malaysia and Canada but all had travel history to China. No local spread in either area has been reported. All cases report exposure to poultry</p> <p>From 2003 through 24/01/2014, 650 lab-confirmed human cases of avian influenza A(H5N1) virus infection have been reported from 15 countries. Of these cases, 386 died. Canada has notified one fatal case with history of travel to Beijing. Vietnam has recently reported one fatal case.</p> <p>Two cases reported in Hong Kong and Hunan District</p>	

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: 17 February 2014

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

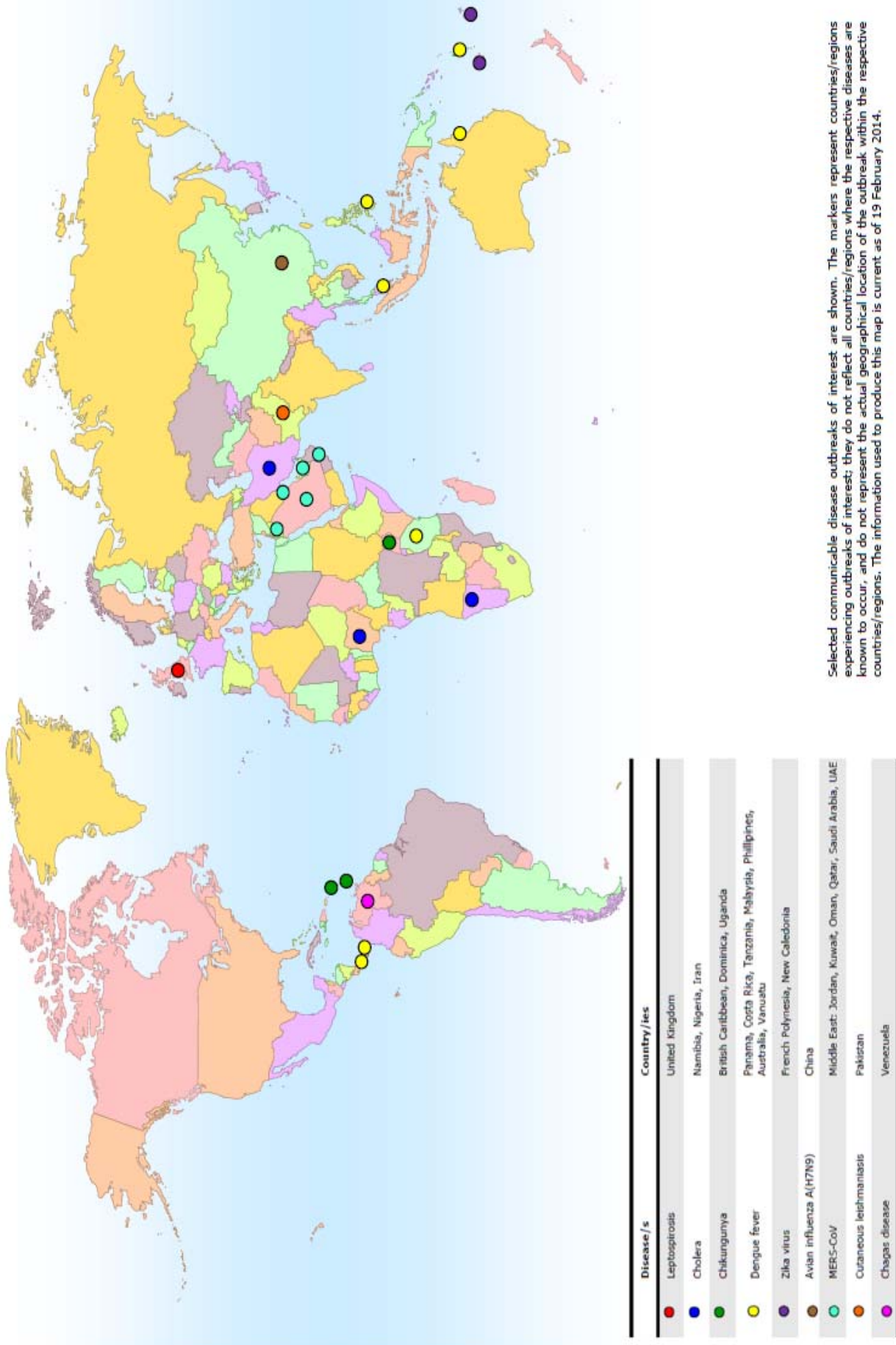


Figure 5. Selected communicable disease outbreaks that may affect South Africans travelling abroad, as at 19 February 2014.