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Update on rotavirus disease

Data from the rotavirus surveillance programme indicate that the 2013 rotavirus season is continuing. There have been no new reports of unusually high numbers of diarrhoeal disease or rotavirus cases to the NICD-NHLS. The upsurge in diarrhoeal disease with predominance of rotavirus reported in Siyanda District (Northern Cape Province), eThekweni Metropolitan (KwaZulu-Natal Province) and subsequently in other KwaZulu-Natal

Province districts is still under investigation (see July 2013 Communicable Diseases Communiqué). Preliminary findings suggest that the phenomenon may be multifactorial, including the impact of inherently lower rotavirus vaccine efficacy in low- and middle-income settings as well as suboptimal vaccine coverage.

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

Meningococcal disease update

The meningococcal season is underway - cases of meningococcal disease are being reported from across the country with an overall increase in case numbers. Meningococcal disease case numbers are expected to peak during the months of August to October each year.

By epidemiological week 28 (week ending 14 July), a total of 99 laboratory-confirmed cases was reported to the Centre for Respiratory Diseases and Meningitis, NICD-NHLS (Table 1). Twenty-five cases have been reported in the <1 year old age group this year so far; this is similar to the number of cases for the equivalent time period and age group in 2012 (n=29).

The reported cases were caused by diverse serogroups, which is in keeping with sporadic endemic disease in the country. Serogroup data were available for 72/99 (73%) of cases. Serogroup B and W135 have been identified most commonly this year (20/54, 37% serogroup B and 34/54, 63% serogroup W135). There were also thirteen cases of serogroup Y and five cases of serogroup C disease; two isolates were non-groupable.

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 meningococcal disease (meningitis and sepsis) should be notified telephonically to the Department of Health.

Table 1. Number of laboratory-confirmed meningococcal disease cases reported until end of epidemiologic week 28 (mid-July)

Province	Year	
	2012	2013
Eastern Cape	14	25
Free State	0	7
Gauteng	42	18
KwaZulu-Natal	13	16
Limpopo	2	1
Mpumalanga	1	1
Northern Cape	0	1
North West	6	5
Western Cape	27	25
	105	99

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

Influenza surveillance

The 2013 influenza season started in epidemiological week 17 (week ending 28 April) and is continuing, although the number of specimens submitted by the Viral Watch influenza surveillance programme has declined in the past four weeks (Figure 1). The influenza detection rate peaked at 64% in epidemiological week 24 (week ending 16 June). To date, influenza has been detected in the specimens of 654 patients: A(H1N1)pdm09 in 85% (558/654) of cases in all nine provinces; A(H3N2) in 9% (62/654) of cases in six provinces; influenza B in

4% (26/654) of cases in Gauteng, KwaZulu-Natal, Limpopo and Western Cape provinces; A(H1N1)pdm09 and A(H3N2) in five cases; and A(H3N2) and influenza B in one patient. Sixty-six patients positive for influenza were also positive for another respiratory virus, adenovirus being the most common (70%, 46/66). In addition, other respiratory viruses were detected in 322 patients negative for influenza. The majority (46%, 152/322) of these were rhinovirus, followed by adenovirus (24%, 79/322).

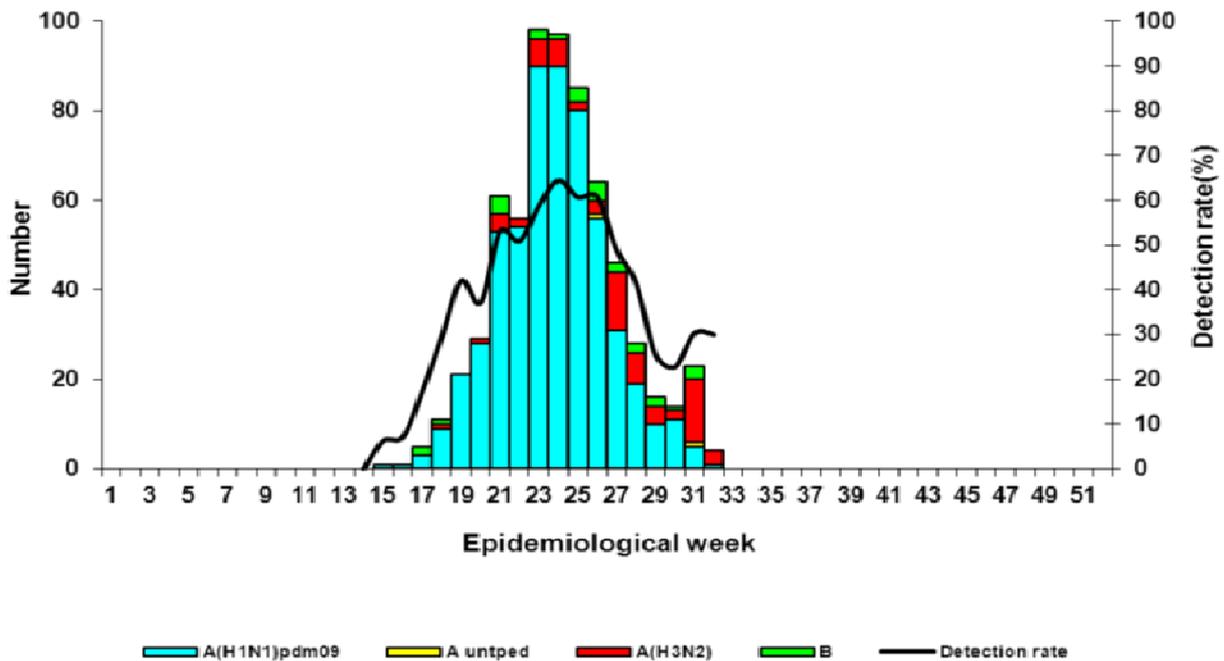


Figure 1. Number of positive samples by influenza types and subtypes and influenza detection rate by week, 2013, Viral Watch surveillance programme

To date, 1 869 specimens from patients admitted with severe acute respiratory illness (SARI) at the five SARI surveillance programme sites have been tested for influenza. Of these, 5% (94/1 869) were positive for influenza, with cases detected at all five SARI sites. Influenza A(H1N1)pdm09 was detected most commonly (84%, 79/94) followed by influenza A(H3N2) which accounted for 10% (10/94) of cases. Influenza B was detected in 3% (3/94) of

cases, and one case of mixed infection with influenza A(H1N1)pdm09 and A(H3N2) was identified; influenza A was detected but not subtyped in two cases (Table 2). In addition, 1 556 other respiratory viruses were detected in the specimens of 1 062 patients; rhinovirus accounted for the majority (35%, 546/1 556) followed by RSV (24%, 376/1 556) and adenovirus (21%, 334/1 556).

Table 2. Cumulative number of identified influenza types and subtypes and total number of samples tested by hospital, 2013, SARI surveillance programme

Hospital	A not subtyped	A(H1N1) pdm09	A(H3N2)	B	Total samples tested
Chris Hani Baragwanath (GP)	1	27	8	1	527
Edendale (KZ)	1	21	0	0	531
Klerksdorp-Tshepong (NW)		0	1	2	594
Mapulaneng (MP)	0	0	0	0	104
Matikwane (MP)	0	0	1	0	113
Total	2	79	10	3	1 869

As in the 2012 influenza season, influenza A(H1N1) pdm09 has been the predominant circulating seasonal strain. Although the influenza season is on the decline, healthcare workers are reminded to consider influenza as a differential diagnosis in patients admitted with severe acute respiratory illness. Detailed guidelines for the prevention and

treatment of influenza are available at: <http://www.nicd.ac.za/assets/files/Healthcare%20Workers%20Handbook%20on%20Influenza%20in%20SA%20-10%20April%202013final%202020.pdf>

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

Rabies

A total of seven human rabies cases has been confirmed in South Africa this year to date. These cases were reported from Free State (n=2), KwaZulu-Natal (n=1), Mpumalanga (n=1) and Limpopo (n=3) provinces.

Two of the three cases from Limpopo Province were confirmed in the past month. The first patient, a 38-year-old male from Elim (Makhado) was bitten on the leg by his own dog in April 2013. He apparently did not seek medical treatment after the incident and therefore did not receive any rabies post-exposure prophylaxis. Approximately three months later he presented to Elim Hospital where he was admitted on 26 July 2013 with a history of an acute illness of two days duration. Clinical features included fever, altered behaviour, anxiety, hydrophobia and hypersalivation. Seizures, muscle spasms, clenching of teeth and insomnia were subsequently also reported. The patient died on the same day of admission. Rabies virus infection was confirmed by a direct fluorescence antibody assay detecting the viral antigen in a post-mortem brain specimen.

The second case is that of a 38-year-old male from Mopani District who was bitten by a dog two

months before the onset of his illness. Information about whether the patient sought or received post-exposure treatment after the incident is still being verified. The patient presented to a local hospital on 27 July 2013, with a 3-day history of headache. He refused hospital admission on that day, but returned on 31 July 2013 presenting with restlessness, confusion with lucid intervals, and hydrophobia. The patient died three days later. Rabies virus infection was confirmed through detection of rabies virus antigen in a post-mortem brain specimen.

Even when a history of animal bites is missing or unreliable, rabies should be suspected in patients (particularly children) with unexplained encephalitis, paralysis or other rabies-like symptoms (including localised pain at wound site, anxiety, hydrophobia, hypersalivation). Although rabies is endemic in South Africa, rural areas are at particularly high risk; these include areas in north-eastern Eastern Cape Province, eastern and south-eastern Mpumalanga Province, northern Limpopo Province and rural areas throughout KwaZulu-Natal Province.

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

Crimean-Congo haemorrhagic fever

Crimean-Congo haemorrhagic fever (CCHF) was confirmed in a 47-year-old farmer from Piet Retief, Mpumalanga Province. He became ill on 24 July 2013, complaining of fatigue and severe headache, and was transferred to a Pretoria hospital for treatment on 26 July 2013. On admission, a generalised petechial rash was present; laboratory tests showed thrombocytopenia and elevated hepatic transaminase levels. The patient's clinical condition did not respond to broad-spectrum antibiotic treatment. The constellation of the presenting features, laboratory findings, and history of frequent exposures to ticks on his farm prompted consideration of CCHF as a differential diagnosis. Blood samples were collected on 29 July and 2 August in which specific IgG and IgM antibodies against CCHF virus were detected. CCHF virus infection was also confirmed by real-time PCR on both specimens. The patient is recovering with supportive treatment at the hospital.

A total of five CCHF cases has been confirmed by the NICD-NHLS for 2013 to date. Fortunately, all of the patients recovered. The cases originated from Free State (n=2), North West (n=1) and Mpumalanga (n=2) provinces. Three cases occurred in January and February, and the two latest cases occurred in July and August.

CCHF should be considered in the differential diagnosis of patients who have contact with ticks and/or livestock or reside in CCHF-endemic areas and present with fever, fatigue, rash, elevated hepatic transaminases, and thrombocytopenia. CCHF is most prevalent in Free State and Northern Cape provinces, but all provinces in South Africa have reported cases over the past thirty years.

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

Update on carbapenemase-producing Enterobacteriaceae

Since 2011, the Antimicrobial Resistance Reference Laboratory (AMRRL) of the Centre for Opportunistic, Tropical and Hospital Infections (COTHI) at NICD-NHLS has been testing referred isolates of suspected carbapenemase-producing Enterobacteriaceae (CPE) for the presence of selected carbapenemase genes. Testing methodology employs real-time polymerase chain reaction using the Light Cycler 480 instrument (Roche Applied Science, Germany), with US-CDC recommended primers and probes.

Seventy CPE isolates (referred from both NHLS and private laboratory groups) were tested during May 2013 to July 2013; NDM-1 (New Delhi metallo- β -lactamase 1) was detected in 27% (19/70) of these. Most isolates testing NDM-1 positive were from patients hospitalised in Gauteng and KwaZulu-Natal provinces, in both public and private healthcare sectors (Figure 2).

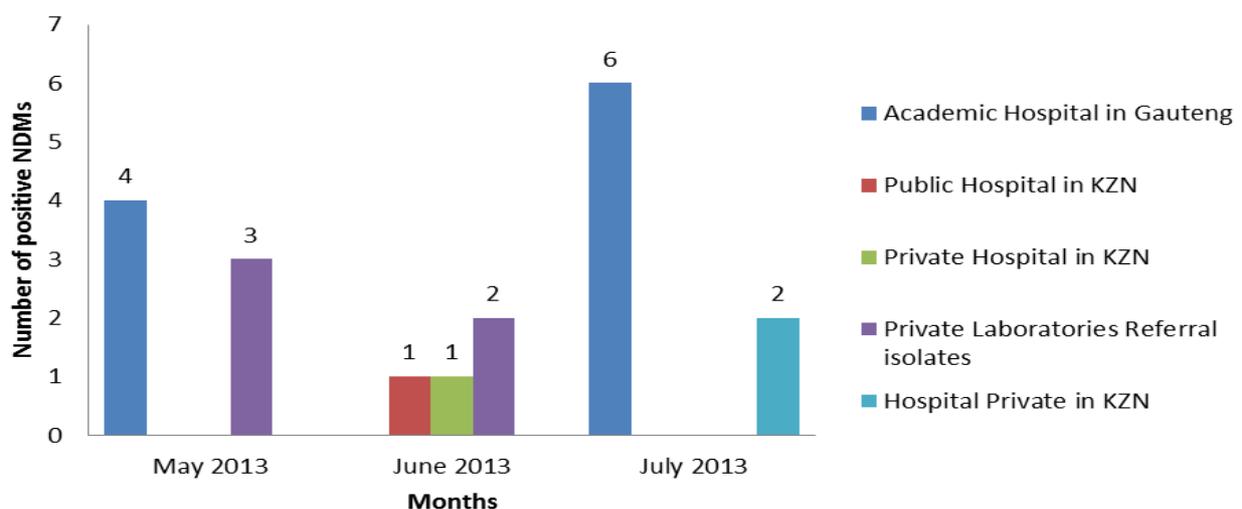


Figure 2. Laboratory-confirmed NDM-1 producing CPE identified amongst referred isolates at AMRRL (NICD-NHLS), South Africa, May-July 2013

It is important to note that this represents the proverbial tip-of-the-iceberg in terms of the current burden of CPE including NDM-1 producing Enterobacteriaceae in South Africa. Given that CPE-infections are currently not reportable or notifiable in South Africa, there is no platform for appropriate surveillance and hence 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 CPE in South Africa will

require concerted efforts in both the public and private healthcare sectors going forward.

NHLS and private laboratories are encouraged to submit suspected CPE isolates 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.

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

BEYOND OUR BORDERS: INFECTIOUS DISEASE RISKS FOR TRAVELLERS

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
Dengue fever		
<u>Angola</u> (Luanda, Malanje, Cuanza Sul and Uije provinces)	As of 29 July 2013, 1 008 cases have been reported including 30 cases in two newly-affected provinces (Cuanza Su and Uije).	Travellers should wear long-sleeved pants and shirts during the day and stay in well-ventilated (fan/air-conditioned) rooms where possible; use mosquito repellents containing DEET to avoid being bitten. The burning of mosquito coils at night and sleeping under a mosquito net in a well-ventilated room are also helpful at preventing other infections transmitted through mosquito bites.
<u>Tanzania</u> (Dar es Salaam)	Since July 2013, an increase in the number of cases and deaths has been reported in Tanzania.	
<u>South East Asia</u> Laos, Thailand, Cambodia, Malaysia, Singapore, Vietnam, Phillipines	An increase in cases has been noted across South East Asia, with some countries reporting 10-16 times increase in infection rates as well as significant increases in deaths as compared to 2012. Only Singapore is reporting a decrease in cases.	
<u>South America</u> Mexico, Bolivia, Columbia, Ecuador, Paraguay and Peru	Dengue fever is endemic in many South American countries and pockets of outbreaks have been reported in 2013.	

Disease & countries	Comments	Advice to travellers
<p>Chikungunya</p> <p><u>Philippines</u></p> <p><u>Singapore</u></p>	<p>Increasing numbers of cases have been reported across the country</p> <p>As of 3 August, Singapore has reported 488 cases for 2013 which is 54 times higher than cases reported for the same time period in 2012.</p>	<p>Travellers should wear long-sleeved pants and shirts during the day and stay in well-ventilated (fan/air-conditioned) rooms where possible; use mosquito repellents containing DEET to avoid being bitten. The burning of mosquito coils at night and sleeping under a mosquito net in a well-ventilated room are also helpful at preventing other infections transmitted through mosquito bites.</p>
<p>Polio</p> <p><u>Somalia</u> (Banadir, Lower Shabelle Province), <u>Kenya</u> (Dadaab)</p> <p><u>Nigeria</u></p> <p><u>Afghanistan</u> (Eastern Region)</p> <p><u>Pakistan</u> (Federally Administered Tribal Area)</p> <p><u>Israel</u></p>	<p>As of 16 August 2013, 105 cases were reported in Somalia, and 10 cases in Dadaab (Kenya) which hosts a major refugee camp home to Somalian nationals.</p> <p>As of 30 July, 40 cases reported</p> <p>As of 30 July, 3 cases reported</p> <p>As of 30 July, 20 cases reported</p> <p>Poliovirus has been isolated in the sewerage system of 24 towns, but no active cases of polio have been identified. A live virus vaccination campaign began in southern Israel on 4 August, with a national roll-out to follow.</p>	<p>Travellers are advised to ensure that they have completed the recommended age appropriate polio vaccine series.</p> <p>It is recommended for the unvaccinated, incompletely vaccinated, or those whose vaccination status is unknown that they receive 2 doses of IPV administered at an interval of 4–8 weeks, a third dose should be administered 6–12 months after the second.</p> <p>Vaccinated travellers to the area should receive a booster (ideally the inactivated polio vaccine (IPV) or alternatively oral polio vaccine (OPV) booster.</p>
<p>Measles</p> <p><u>Congo</u> (Nizi District)</p> <p><u>Pakistan</u></p>	<p>500 cases including 9 deaths have been reported as of 31 July 2013.</p> <p>As of 29 July 2013, 22 192 cases including 192 deaths have been reported.</p>	<p>Adolescents and adults (unless pregnant) who have not been vaccinated should be vaccinated. Children should be up to date with their routine measles immunisation schedule.</p>

Disease & countries	Comments	Advice to travellers
<p>Yellow Fever</p> <p><u>Democratic Republic of Congo (DRC)</u></p>	<p>A mass vaccination campaign has been launched in Kasai–Oriental Province targeting > 500 000 people. However, 13 new cases have been reported in Bandundu Province between 13 June and 18 July.</p>	<p>For travellers to yellow fever risk areas, it is recommended for the unvaccinated or those whose vaccination status is unknown that they receive yellow fever vaccination ≥ 10 days prior to departure. Vaccine is contraindicated in pregnant women, infants <9 months, individuals with egg allergies, and certain immunosuppressed individuals (including HIV-infected persons with $CD4 < 200/mm^3$).</p>
<p>Cholera</p> <p><u>Nigeria (Ogun State)</u></p> <p><u>India</u> Orissa State Rayagadah District</p> <p>Maharashtra State – city of Mumbai</p> <p>Gujarat State – Petlad Tehsil</p>	<p>104 cases (including 3 deaths) of gastro-enteritis widely believed to be cholera have been reported during July 2013. However, a cholera outbreak has not formally been declared.</p> <p>As of 27 July 2013, ten cases of confirmed cholera were reported.</p> <p>As of July 2013, 52 cases with no fatalities have been reported.</p> <p>As of 19 July two confirmed cases were reported.</p>	<p>Drink and use safe water (bottled with unbroken seal, boiled or treated with chlorine tablet). Wash hands with soap and safe water often. Eat hot well-cooked food, peel fruits and vegetables. Use latrines or bury faeces.</p> <p>Vaccines offer delayed and incomplete protection and should therefore not be used to substitute infection prevention and control measures.</p>
<p>West-Nile virus</p> <p><u>Greece</u></p>	<p>As of 16 August a total of 26 cases has been reported.</p>	<p>West Nile virus is transmitted by several species of mosquitoes.</p> <p>Travellers should wear long-sleeved pants and shirts during the day and stay in well-ventilated (fan/air-conditioned) rooms where possible; use mosquito repellents containing DEET to avoid being bitten. The burning of mosquito coils at night and sleeping under a mosquito net in a well-ventilated room are also helpful at preventing other infections transmitted through mosquito bites.</p>

Disease & countries	Comments	Advice to travellers
<p>MERS –CoV</p> <p><u>Saudi Arabia</u></p> <p><u>United Arab Emirates, Tunisia, Jordan, Qatar</u></p> <p><u>United Kingdom, France, Italy</u></p>	<p>As of 18 August 2013, 76 cases have been reported (including 39 deaths) since the first reported case in September 2012.</p> <p>These WHO Eastern Mediterranean countries have reported 12 cases including 5 deaths as of 7 August 2013.</p> <p>As of 7 August 2013, 8 cases and 3 deaths have been reported from these European countries; of note all the cases had recently travelled to a Middle Eastern country.</p>	<p>Infection prevention and control measures include good cough etiquette, avoiding contact with sick people, and frequent hand washing with soap and water or the use of an alcohol-based hand rub.</p> <p>Travellers should contact a medical practitioner if they develop acute respiratory symptoms upon return.</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 19 August 2013

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