

# Communicable Diseases Communiqué

Volume 9, No. 8

August 2010



## 2010 Football World Cup South Africa: returning visitors

The majority of travellers returning from the World Cup did not experience health problems as a result of their trip. However, several cases of measles have been reported in visitors who have since returned to their countries of origin, very likely related to the ongoing measles outbreak in South Africa. Measles immunization was recommended in the pre-travel advisory for visitors to South Africa.

Healthcare workers (HCW) should be aware of those diseases that are endemic to South Africa, as well as those diseases which are currently experiencing seasonal activity. Infectious disease risks to be aware of include influenza,

meningococcal disease, measles, hepatitis A, malaria, rabies, tick bite fever, TB and STIs (including HIV). Rift Valley fever outbreak activity declined significantly in June and July, and travellers would have been at very low risk in any event.

Travellers may also have visited other countries in addition to South Africa and HCW should therefore obtain a thorough travel history when determining the differential diagnoses in ill returning travellers.

**Source:** Travel Health and Outbreak Response Units, NICD

## Influenza

### Viral Watch Surveillance

As of 13 July, specimens from 1575 patients from Viral Watch sites throughout South Africa have been tested. Influenza virus has been detected in 35% (555/1575) of these specimens, 53% (295/555) of which were influenza B virus and 47% (260/555) influenza A virus, i.e. 75% (196/260) influenza A (H3N2), 24% (62/260) pandemic H1N1(2009), and two awaiting typing. The influenza detection rate rose to 65.2% for the week ending 8 August.

### SARI Surveillance

From the 4<sup>th</sup> of January 2010 to the 13<sup>th</sup> of August 2010, 2867 patients were enrolled in the SARI surveillance programme. Influenza test results are available for 97% (2787/2867) of enrolled patients. Of these, 5% (142/2787) are positive. The majority of these (63%, 90/142) are influenza B and 37% (52/142) are influenza A(H3N2). As yet, there have been no patients with pandemic H1N1(2009) identified through the SARI surveillance programme

during 2010. The peak detection rate for influenza to date is 28%, recorded at epidemiological week 27. There was a decline in the detection rate from week 28, with a detection rate of 8% recorded in week 29. However, in week 30, the detection rate increased to 23%. This may represent increased influenza transmission following the return of learners to school, a phenomenon that is well documented.

### Influenza vaccination

Monovalent pandemic (H1N1)2009 influenza vaccine is still available at certain private-sector pharmacies, as well as certain public-sector healthcare facilities. The dictum 'it's never too late to vaccinate' holds true; persons at high risk for severe influenza disease may still benefit from vaccination, given that the influenza season is ongoing.

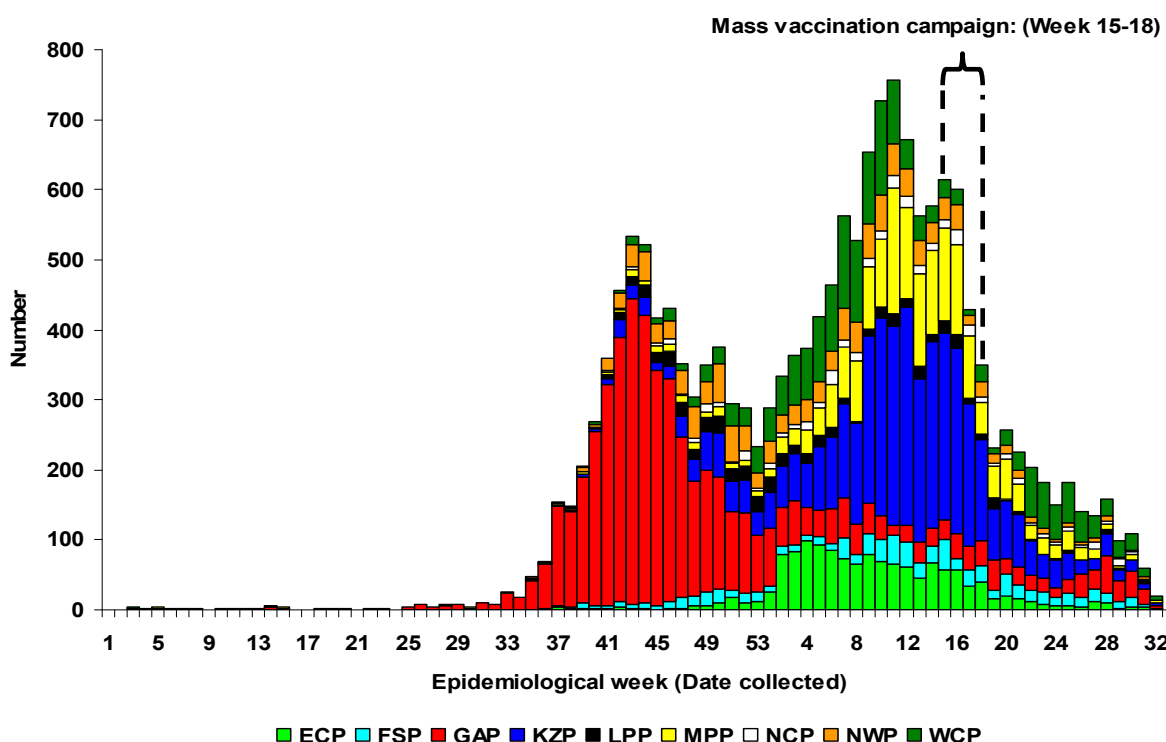
**Source:** Epidemiology Division, Respiratory Virus and Virus Diagnostic Units, NICD

## Measles update

There have been 583 additional laboratory confirmed measles cases since the last published Communiqué, bringing the total to 17, 354 cases since the beginning of 2009 to 12 August 2010. Cases have been reported from all nine provinces, with Gauteng (30%, 5 254/17 354), KwaZulu-Natal (24%, 4 142/17 354) and Mpumalanga (11%, 1 915/17 354) provinces accounting for the highest proportions of the total (Figure). Children aged < 1 year account for 35% (5 704/16 486) of cases, with

26% occurring in those aged 6 to 11 months. Although the measles outbreak is ongoing, there is a trend towards decreasing numbers of new cases reported each week. Measles is currently active in numerous other eastern and southern African countries; healthcare workers and travellers should take cognizance of this.

**Source:** Divisions of Epidemiology and Virology, NICD



Province abbreviations: ECP=Eastern Cape; FSP=Free State; GAP=Gauteng; KZP=KwaZulu-Natal; LPP=Limpopo; MPP=Mpumalanga; NCP=Northern Cape; NWP=North West; WCP=Western Cape

**Figure: Measles IgM positive results per province: South Africa, January 2009 to 12 August 2010**

## Rift Valley fever update

One additional Rift Valley fever (RVF) case has been identified since the last published Communiqué, bringing the total to 229 laboratory-confirmed cases as of 18 August 2010. Of these, 26 cases were fatal. The onset of illness of the most recent case was reported as 6 July 2010, and occurred in the Northern Cape.

Despite our observation of reduced RVF virus transmission throughout the colder winter months,

there is much concern over a possible re-emergence of the outbreak in previously affected areas accompanying the expected seasonal increase in temperature and rainfall. Therefore, healthcare workers should continue to suspect RVF in patients meeting the case definition and submit specimens to the NICD for laboratory testing. Additionally, it must be borne in mind that certain RVF complications often manifest a few weeks after the acute infection;

*(Continued on page 3)*

*(Continued from page 2)*

meningoencephalitis may present up to 4 weeks later, and ocular complications (notably retinitis) may present weeks to months later. In such cases, the acute RVF infection may have been extremely mild and not diagnosed initially.

For detail on the RVF outbreak in South Africa, see the most recent interim report available via the NICD website ([www.nicd.ac.za](http://www.nicd.ac.za)).

**Source:** SA-FELTP, Special Pathogens and Outbreak Response Units, NICD; Departments of Health, and Agriculture, Forestry and Fisheries

## Meningococcal disease

Sporadic cases of meningococcal disease continue to be reported across the country. The numbers of cases are expected to increase during June and July, and to peak during the months of August to October. Laboratory-based reporting has inherent delays, so not all clinical cases may be reflected in our reports for this month.

By the end of epidemiological week 31, a total of 189 laboratory-confirmed cases was reported to the Respiratory and Meningeal Pathogens Reference Unit (RMPRU), NICD (Table). These cases showed diversity in serogroups, which is in keeping with sporadic endemic disease in the country. Serogroup data are available for 146/189 (77%) of cases. Serogroup B and W135 have been identified most commonly this year (50/146, 34% serogroup B and 63/146, 43% serogroup W135). Other serogroups included: A (1%, 2/146), C (8%, 11/146) and Y (14%, 20/146).

The winter and spring seasons are when numbers of meningococcal disease cases typically increase. As

such, there should be a high index of suspicion for meningococcal disease which may present with 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.

Chemoprophylaxis should be offered to close contacts of confirmed/probable cases. Close contacts are defined as those who have had prolonged close contact with respiratory secretions of the case in a household-type setting during the 7 days before onset of illness. Examples of such contacts would be:

- those living and/or sleeping in the same household
- pupils, students, miners, members of the military or police sleeping in the same dormitory or sharing a kitchen where food is communally prepared or sharing the same bathroom in a hostel, barracks or residence.

*(Continued on page 4)*

**Table: Number of laboratory-confirmed meningococcal disease cases reported by epidemiological week 31, 2009 and 2010, by province**

Province	2009	2010
Eastern Cape	15	13
Free State	7	12
Gauteng	118	86
KwaZulu-Natal	15	11
Limpopo	2	5
Mpumalanga	23	9
Northern Cape	6	15
North West	10	8
Western Cape	39	30
<b>South Africa</b>	<b>235</b>	<b>189</b>

(Continued from page 3)

Those who have had transient close contact with a case require chemoprophylaxis only if they have been directly exposed to large droplets/secretions from the respiratory tract within 10 days of a case becoming ill or being admitted to hospital. This also

applies to healthcare workers and emergency personnel.

**Source:** Respiratory and Meningeal Pathogens Reference Unit and Outbreak Response Unit, NICD

## Foodborne illness outbreak

Five family members were seen at a hospital in Vhembe district (Limpopo Province), presenting with headache, abdominal cramps, vomiting and diarrhoea. They had all eaten elephant biltong; the elephant had been slaughtered and the biltong prepared and stored in their village. No clinical specimens were collected from the patients, but a Limpopo Department of Health Environmental Health Practitioner submitted a sample of the elephant biltong to the Infection Control Services Laboratory in Johannesburg for testing. Non-typhoidal *Salmonella* spp was isolated from the biltong, later identified as *Salmonella baiboukoum* (a rarely encountered species) at the Enteric Diseases Reference Unit at the NICD. No further cases were identified, and health promotion and education was undertaken in the area.

Non-typhoidal *Salmonella* spp contamination of biltong resulting in foodborne outbreaks is well described. The first description was in 1949, where *S. lomita* was isolated from game biltong which had caused an outbreak of gastroenteritis.<sup>1</sup> In 1954, *S. newport*-contaminated beef biltong resulted in an outbreak affecting 27 people (mostly girls at a school hostel), with one death. *S. newport* was also isolated from patients' stool specimens as well as post-mortem spleen and intestine specimens from the fatal case. Of interest is that the biltong was then kept at room temperature and periodically cultured for 2 years thereafter; *S. newport* was isolated on

each occasion and therefore had remained viable for a prolonged time despite the high concentration of salt in the meat.<sup>2</sup> In 1963, a study of microbiological contamination of commercial samples of biltong yielded *S. poona* in one case. A study conducted in 2009 assessing the prevalence of *E. coli* O157:H7 in commercial meat products sold in the Eastern Cape Province found the organism in samples of polony, mincemeat, cold meat and biltong.<sup>3</sup> A widely held belief that the curing process of biltong renders it resistant to or free of microbes is therefore a myth, and rigorous food safety practice is necessary to mitigate and prevent bacterial contamination of this national delicacy.

### References:

1. Jansen BC. Unpublished report (1949) – referenced in Van den Heever L.W. The viability of *Salmonellae* and bovine cysticerci in biltong. *SAMJ*. 2 January 1965.
2. Nesor AT. Fatal *Salmonella* food-poisoning from infected biltong. *SAMJ*. 23 February 1957.
3. Abong'o BO, Momba MNB. Prevalence and characterisation of *E. coli* O157:H7 isolates from meat and meat products sold in Amathole District, Eastern Cape Province of South Africa. *Food Microbiol*. 2009;26:173-176.

**Source:** Outbreak Response and Enteric Diseases Reference Units, NICD; Department of Health, Limpopo; NHLS Infection Control Services Laboratory

## Pertussis

A 2-month-old child was admitted to a hospital in Gauteng with a diagnosis of pneumonia. Amongst the investigations done, a nasopharyngeal aspirate specimen was submitted for *Bordetella pertussis* PCR, and tested positive. Pertussis had not been clinically suspected, and as a result appropriate infection prevention and control measures were not

instituted until 3 days after admission when test results became available. Further investigation revealed that the infant had not received the scheduled immunisations at 6 weeks of age, and her 2-year-old sibling had not received the scheduled immunisations at 18 months of age.

(Continued on page 5)

(Continued from page 4)

*B. pertussis* causes an acute respiratory illness, which in its typical or classic form progresses through 3 phases: the early catarrhal phase, the paroxysmal phase (with the classic 'whooping' cough) and the convalescent phase. However, pertussis encompasses a spectrum of disease, the presentation varying according to age, degree of immunity, use of antibiotics and respiratory co-infection. Symptoms in young infants, adolescents and adults may be atypical and the diagnosis missed. Despite good vaccination coverage, pertussis continues to be a problem in both the developing and developed world. In recent years, there has been an increase in pertussis in adolescents and young adults, who often present with atypical pertussis symptoms and are not diagnosed or treated accordingly. These groups represent a significant source of infection for infants; transmission has been reported from mothers, grandparents, adolescents, and healthy healthcare workers. *B. pertussis* is transmitted by respiratory droplet spread, and is highly contagious (especially in the first week of illness) with up to 90% of susceptible household contacts developing the disease. Pertussis can be diagnosed by culture or PCR of nasopharyngeal aspirates or posterior nasopharyngeal swabs. Culture method is the most

specific way to diagnose pertussis; however, proper collection, transport, storage, and processing of specimens are critical for this method. PCR testing is more sensitive than culture, allows a more rapid result, and in 50% of cases remains positive even after 7 days of antibiotic treatment; it is therefore the preferred diagnostic method where available.

Cases admitted to hospital should be isolated using standard and droplet precautions for 5 days after commencement of appropriate antibiotics. Cases in the community should similarly be excluded from work/school/daycare for 5 days after commencement of antibiotics. Healthcare workers with close contact are at risk for nosocomial pertussis and should receive post-exposure prophylaxis where indicated. Use of appropriate personal protective equipment at all times will help to prevent nosocomial transmission. Several countries have introduced routine booster doses with adult formulation acellular pertussis vaccines for adolescents and adults (including healthcare workers). However, a single-component acellular pertussis vaccine is not yet available in South Africa.

**Source:** Outbreak Response Unit, NICD; Lancet Laboratories; Life Healthcare Wilgers Hospital.

## Trypanosomiasis

Trypanosomiasis was diagnosed in a Zambian national living in southeastern Zambia and who had experienced multiple tsetse fly bites on visits to his game ranch. He presented with an acute febrile illness characterized by headache, rigors and vomiting. He was tested for malaria repeatedly over 3 days and the smears were negative. Trypanosomes were noted on a Giemsa-stained smear performed on day 4 of illness and he was referred to South Africa for treatment with suramin. There was no evidence of the typical trypanosomal chancre. The course of illness was complicated by a myocarditis with hypotension, tachycardia, and depressed S-T waves on ECG, epistaxis and a profound thrombocytopenia (platelet count  $9 \times 10^9/L$ ) and liver dysfunction (AST 226 U/L; ALT 528 U/L; total bilirubin 79  $\mu\text{mol/l}$ ). The blood smear initially showed a high parasitaemia which cleared within 2-3 days after starting suramin. He developed a diffuse macular

rash which resolved after ceftriaxone was discontinued. Similar rashes have been reported after suramin administration or with trypanosomiasis per se. There was no clinical evidence of central nervous system dysfunction but as is routine with all cases of trypanosomiasis a lumbar puncture was performed after the parasites had cleared from the peripheral blood smear. This showed a marginal increase in protein (protein 0.7 g/L) but no cells or trypanosomes. The recommended procedure was followed, whereby the CSF was examined within 10 minutes after a double spin to concentrate potentially very scanty parasites. The patient has responded well to a course of suramin treatment and will be followed up for a period of 2 years.

**Source:** Travel Health and Parasitology Units, NICD.

## Viral haemorrhagic fevers update

There have been no new laboratory-confirmed cases of viral haemorrhagic fevers since the last published Communiqué. A total of 3 CCHF cases has been confirmed for South Africa for 2010 to date. The cases originated from Free State (n=1) and Northern Cape (n=2) provinces. In addition, two

cases have been reported from Namibia for 2010 to date.

**Source:** Special Pathogens Unit, NICD

## Rabies alert and update

Rabies has been confirmed in a kept dog in Sophiatown, Western Johannesburg. This is the first case of animal rabies in the area, and healthcare workers should be alert to possible human exposures. A veterinary response to this case is planned.

Rabies prophylaxis should be considered for all animal exposure cases (bites, scratches, nicks, licks on broken skin and mucosa) A risk assessment should be conducted for each animal exposure case, and should include questions about the animal involved (i.e. stray or kept pet), vaccination records of the animal, the health and behaviour of the animal and whether the attack was provoked or not. Animal exposures are classified into 3 risk groups, with risk group 1 constituting negligible risk (i.e. petting or licking of intact skin), group 2 low- to medium-risk (i.e. wounds without bleeding) and group 3 high risk (wounds that draw blood, licking of broken skin or mucosa) exposures.

All cases considered to be at risk of rabies exposure should receive prompt wound care including copious washing of the wound with soap and water, the application of disinfectants (iodine-based), and administration of antibiotics and tetanus toxoid. Risk group 2 exposures require a series of five doses of rabies vaccine on days 0, 3,7,14 and 28. Risk group 3 exposures should receive the same series of

rabies vaccine as for risk group 2, as well as human rabies immunoglobulin (infiltrated into the wound as far as possible, with the remainder administered intramuscularly in the deltoid muscle).

There are two major obstacles to the proper and effective use of rabies prophylaxis: poor general-public awareness regarding both the risk of rabies after an animal exposure and availability of rabies post-exposure prophylaxis, as well as inappropriate management of exposures by healthcare workers.

There have been no new laboratory-confirmed human cases of rabies since the last published Communiqué. A total of 9 human rabies cases has been laboratory-confirmed for South Africa for 2010 to date. These cases originated from Mpumalanga (n=1), KwaZulu-Natal (n=3), Eastern Cape (n=2) and Limpopo (n=3) provinces.

**Source:** Special Pathogens Unit, NICD

## 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
<p><b>Flooding and communicable disease risks:</b> Pakistan</p>	<p>As of 18 August 2010, the UN estimated that 20 million people have been affected by the recent floods in Pakistan, with 1,600 recorded deaths. Floods can potentially increase the transmission of both waterborne (e.g. typhoid fever, cholera, leptospirosis and hepatitis A) and vector-borne (e.g. malaria, dengue, yellow fever, and West Nile virus) diseases, many of which are endemic to Pakistan. At least one case of cholera has been confirmed in the affected area to date.</p>	<p>Travellers should take precautionary measures to avoid being bitten by mosquitoes.<sup>1</sup> Precautions must also be taken when consuming food and water, utilise water purification tablets where needed, and practice good hand hygiene.<sup>2</sup> Hepatitis A vaccination is recommended, to be given at least 10 days prior to travel.</p>
<p><b>Plague:</b> Peru</p>	<p>As of 30 July 2010, local authorities have reported 17 cases of plague in Ascope Province, Peru. Of these, 4 cases are pneumonic, 12 are bubonic, and one is septicaemic plague.</p>	<p>Travellers should take precautionary measures to avoid being bitten by fleas<sup>1</sup>, especially in areas reporting large numbers of diseased rats.</p>
<p><b>Poliomyelitis:</b> Epidemic: Tajikistan, the Russian Federation</p> <p>Endemic transmission: India, Congo (DR), Afghanistan, Angola, Nigeria</p>	<p>From January to 10 August 2010, 452 polio cases have been confirmed in Tajikistan following the importation of wild poliovirus type 1 originating in northern India. Of these, 19 cases were fatal. An additional seven virologically-related cases have been reported in the Russian Federation.</p> <p>Countries where polio is endemic (incl. India, DRC, Afghanistan, Angola and Nigeria) have continued to confirm low case numbers during 2010.</p>	<p>Travellers who have previously received three or more doses of OPV or IPV should be offered a booster dose of polio vaccine before departure. Non-immunised individuals require a complete course of vaccine. It is also important to note that vaccination does not guarantee immunity. Travellers are additionally advised to follow safe food and water practices, and practice good hand hygiene to prevent infection.</p>
<p><b>Influenza:</b> Worldwide</p>	<p>During August 2010, authorities in India are reporting increased influenza virus transmission, primarily due to pandemic (H1N1)2009. In the temperate southern hemisphere countries, only South Africa and New Zealand are reporting increasing influenza activity. Low to moderate levels of pandemic H1N1(2009) activity continue in the tropics of the Americas, West Africa, and South and Southeast Asia.</p>	<p>Travellers are advised to avoid close contact with people suffering from acute respiratory infections and, where possible, crowded enclosed spaces. Frequent hand washing, especially after direct contact with ill persons or their environment may reduce the risk of infection. Ill persons are encouraged to practice good cough etiquette (maintain distance, cover coughs and sneezes with disposable tissues or clothing, wash hands).</p>

1. Vector-borne transmission. Travellers should take precautionary measures to avoid bites: use insect repellents (containing 30-50% DEET), wear light-coloured clothing, and use insecticide-treated bed nets.
2. Prevention of food and waterborne diseases. Drink water that is bottled or bring it to a rolling boil for 1 minute. Bottled carbonated water is safer than uncarbonated water. Avoid ice and food products (e.g. ice cream) that may be made with contaminated water. Eat foods that have been thoroughly cooked and that are hot and steaming. Avoid raw vegetables and fruits that cannot be peeled. Peel the fruit and vegetables yourself after washing your hands with soap. Do not eat the peelings. Avoid foods and beverages from street vendors.

**Source:** Travel Health and Outbreak Response Units, NICD.

**References:** ProMED-Mail ([www.promedmail.org](http://www.promedmail.org)), World Health Organization ([www.who.int](http://www.who.int)), Centers for Disease Control and Prevention ([www.cdc.gov](http://www.cdc.gov)), Europe Media Monitor (<http://medusa.jrc.it/medisys/helsinkiedition/en/home.html>); last accessed 2010/08/18.

*This communiqué is published by the National Institute for Communicable Diseases (NICD), a division of the National Health Laboratory Service (NHLS), on a monthly basis for the purpose of providing up-to-date information on communicable diseases in South Africa. Much of the information is therefore preliminary and should not be cited or utilised for publication. Questions and comments may be addressed to: The Outbreak Response Unit: [outbreak@nicd.ac.za](mailto:outbreak@nicd.ac.za); Private Bag X4, Sandringham, 2131, South Africa*

