



## Influenza

### Viral Watch: influenza-like illness (ILI) surveillance programme

Although sporadic detections of influenza continue to be made, the number of specimens received per week has continued to decline. Of the 1 075 influenza positive specimens to date, 1 005 (93%) were influenza A virus, 53 (5%) influenza B virus, and 17 (1.6%) were positive

for both influenza A and B viruses (dual infections). Eighty-nine of these influenza positive specimens were also positive for one or more other respiratory virus.

Of the 1 020 influenza A strains further identified, 885 (87%) were A(H1N1)2009, and 135 (13%) A(H3N2). Influenza has been detected in all 9 provinces.

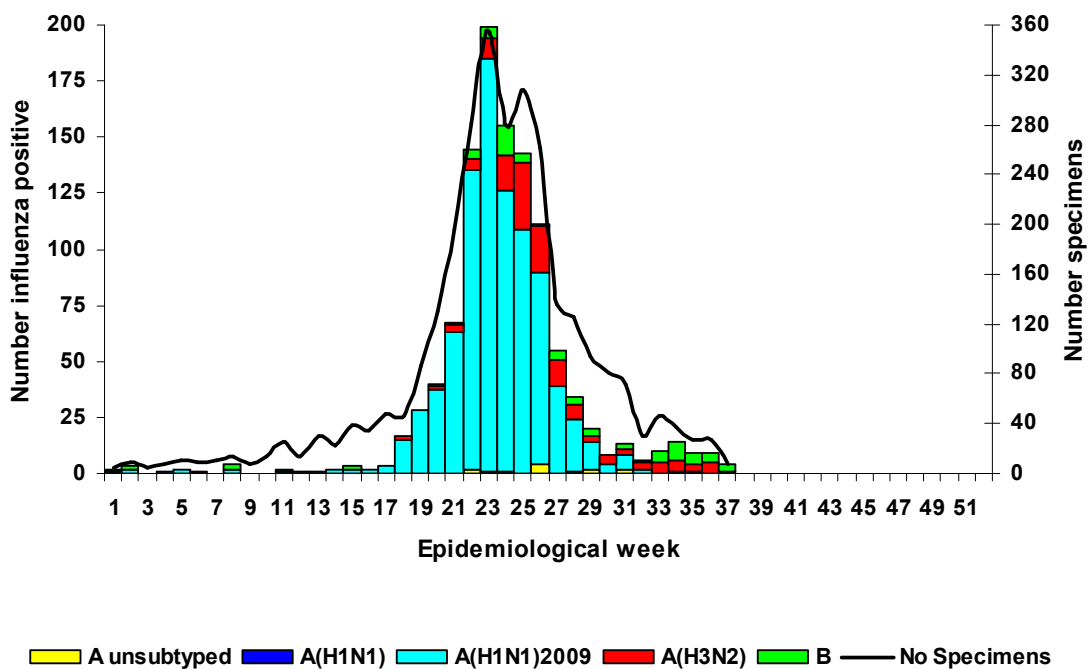


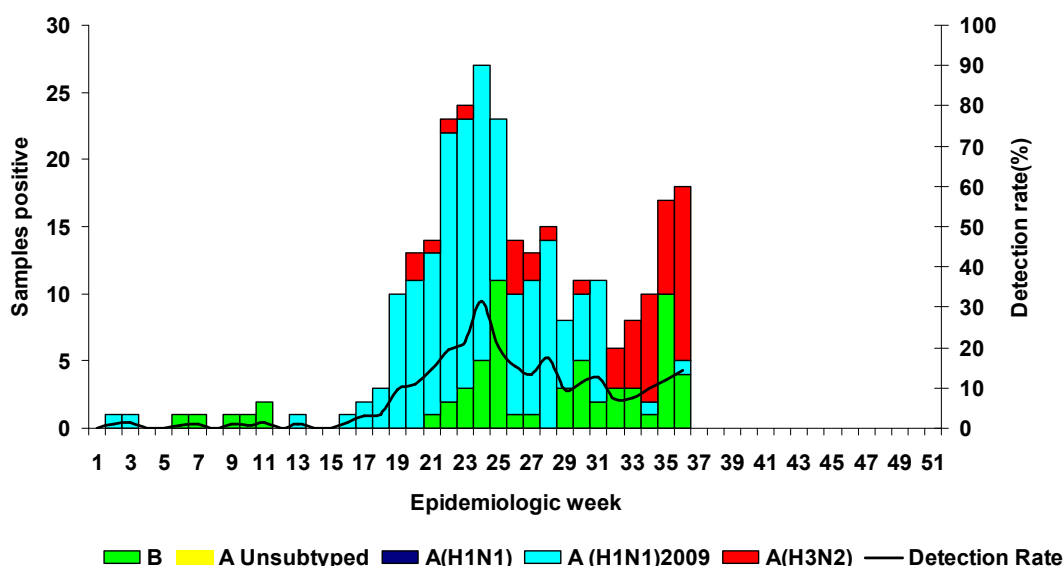
Figure 1: Number of positive samples by influenza types and subtypes and number of specimens received by week, Viral Watch surveillance programme 2011.

### Severe Acute Respiratory Illness (SARI) surveillance programme

SARI surveillance is a sentinel hospital-based surveillance program conducted at four sites in four provinces of South Africa. Hospitalised patients meeting the surveillance case definition are prospectively enrolled and clinical and epidemiologic data are collected using standardised questionnaires. Upper respiratory tract samples are tested for the presence of influenza and other respiratory viruses using real time reverse transcriptase PCR. Please note that data presented here are preliminary. For the period 1 January to 11 September 2011, 3 599 patients were enrolled into the

SARI programme. Of these, 99% (n=3 570) have been tested and 280/3 570 (8%) were positive for influenza virus. The majority, 169/280 (60%) of influenza positive samples were A(H1N1)2009, 61(22%) influenza B, 48 (17%) influenza A(H3N2) and 1 dual infection with influenza A(H1N1)2009 and A(H3N2).

The 2011 influenza season, which started in week 20 (week starting 16 May 2011), peaked in week 24 (week starting 5 June 2011) with a detection rate of 31 %, and was dominated by influenza A (H1N1) 2009 subtype. However, in the past 5 weeks influenza A (H3N2) has been the predominant subtype.



**Figure 2: Number of positive samples by influenza types and subtypes and detection rate by week, SARI surveillance programme 2011.**

Although influenza activity has decreased, given that there are still cases being detected healthcare workers are encouraged to continue to consider influenza as a differential diagnosis

for persons presenting with severe acute respiratory illness.

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

### Measles and rubella

There was one new laboratory-confirmed measles case since the last published communiqué. Since January 2011, a total of 4 250 suspected measles cases were tested. Of these, 2% (82/4 250) were measles IgM positive and 27% (1 149/4 250) rubella IgM positive. Measles and rubella cases were reported from all nine provinces. Age was known in 90% (74/82) and 97% (1 117/1 149) of measles and rubella cases respectively. Of patients with measles, children <1 year

accounted for 50% (37/74) of the cases with 32% (24/74) occurring in those aged <9 months. Of patients with rubella, persons in the age group 5-9 years accounted for a higher proportion (51%, 569/1 117) of the total cases while 6% (68/1 117) were in those aged 15-49 years.

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

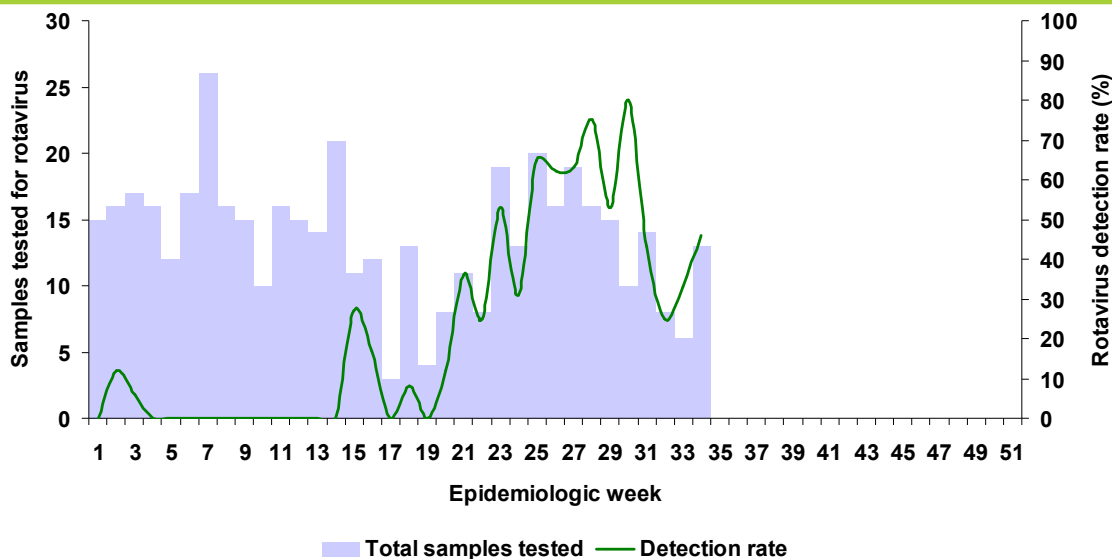
### Rotavirus

Rotavirus is a common cause of diarrhoea-associated hospitalisations and deaths in children. In August 2009, South Africa became the first African country to introduce the monovalent human rotavirus vaccine (GSK Biologicals) into the expanded programme of immunisation (EPI).

provinces: North West, Gauteng, Mpumalanga and KwaZulu Natal. The 2011 rotavirus season started in week 21 (week ending 29 May) when the rotavirus detection rate was 36% (4/11) (Figure 3).

This update summarises data on rotavirus hospitalisations from an ongoing sentinel rotavirus surveillance programme for severe diarrhoea conducted at five hospitals in four

The season is ongoing and to date, the highest detection rate was in week 30 (week ending 31 July) in which 8 of 10 stools tested were rotavirus positive (80%). For the period 1 January 2011 to 28 August 2011, the total number of cases (465 stools) testing rotavirus



**Figure 3: Number of stools tested for rotavirus and detection rate by week, rotavirus surveillance 2011**

*(Continued from page 2)*

positive (109/465, 23%) was much lower compared to the number of rotavirus positive cases for the same period in 2010 (230/945 stools, 24%). In summary, the rotavirus season is ongoing and surveillance data indicate a reduction in numbers of patients

hospitalised with rotavirus diarrhoea, likely as a result of the implementation of the nationwide rotavirus vaccination programme.

**Source:** Epidemiology and Surveillance and Viral Gastroenteritis Units, NICD-NHLS

## Meningococcal disease

Sporadic cases of meningococcal disease continue to be reported across the country, with a small seasonal increase of laboratory-confirmed cases. Cases are expected to increase further, usually peaking during the months of August to October. Laboratory-based reporting has inherent delays, so although clinical cases may be increasing, these cases may not yet be reflected in the data presented here.

By the end of epidemiological week 37 (week ending 16 September), a total of 205 laboratory-confirmed cases were reported to the Respiratory and Meningeal Pathogens Reference Unit (RMPRU), NICD-NHLS (Table).

These cases showed diversity in serogroups, which is in keeping with sporadic endemic disease in the country. Serogroup data were available for 158/205 (77%) of cases.

Serogroups W135 and B have been identified most commonly this year (72/160, 45% serogroup W135 and 45/160, 29% serogroup B). Other identified serogroups included C (9%, 14/160) and Y (17%, 27/160).

The winter and spring seasons are when cases of meningococcal disease 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. All cases of suspected meningococcal disease (meningitis and sepsis) should be notified telephonically to the Department of Health.

**Source:** Respiratory and Meningeal Pathogens Reference Unit, NICD-NHLS

**Table: Number of laboratory-confirmed meningococcal disease cases reported by week 37 (week ending 16 September), 2010 and 2011, by province**

Province	2010	2011
Eastern Cape	17	23
Free State	18	13
Gauteng	143	95
KwaZulu-Natal	24	16
Limpopo	8	4
Mpumalanga	18	12
Northern Cape	16	6
North West	8	3
Western Cape	40	33
<b>South Africa</b>	<b>292</b>	<b>205</b>

## Rabies

September 28 is World Rabies Day, a global initiative to raise awareness of this otherwise neglected disease (visit [www.worldrabiesday.org](http://www.worldrabiesday.org) for more information and resources). Despite being almost completely preventable, the age-old scourge of rabies still accounts for an estimated 55 000 human deaths per year globally. The overwhelming brunt of disease is borne in the developing countries of Asia and Africa, with 31 000 and 24 000 estimated cases annually, respectively (source: World Health Organization). Despite these figures, it is believed that rabies is grossly underreported in developing countries. In a study on human dog bite incidence in Tanzania, the extrapolated number of human rabies cases exceeded the reported number of cases 100-fold<sup>1</sup>. That rabies is still a neglected disease in developing countries despite significant numbers of deaths can be attributed to lack of political commitment for the control of the disease in animals in the face of many competing priorities, as well as the general availability, accessibility and awareness of modern biologicals for rabies post-exposure prophylaxis (PEP). In South Africa, the true burden of rabies disease is not known.

In South Africa between 5 and 31 laboratory-confirmed human cases have been reported annually since 1983<sup>2</sup>. The majority of animal and human cases are reported from the coastal provinces of KwaZulu-Natal and the Eastern Cape. In recent years rabies has re-emerged in several locations in South Africa where it had

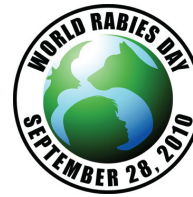
previously been under control. In 2005-2006, an outbreak in Limpopo Province led to the death of at least 22 confirmed human cases (although a number of suspected or probable cases were also identified)<sup>3</sup>. Cases of human rabies have since been reported from this province annually. Canine rabies has also re-emerged in Mpumalanga Province since 2008 where it has spread from the Nkomazi district to Ehlanzeni and Bushbuck Ridge districts; this has been accompanied by annual detection of cases of human rabies ever since. In 2010, the first locally acquired human rabies case in Gauteng Province was confirmed in a 2 year old child from Johannesburg. Rabies was introduced to the Johannesburg Metro from KwaZulu-Natal and resulted in 36 confirmed animal cases in 2010 and a further 14 in 2011; the latest case was reported in June 2011 (data source: Rabies Unit, ARC-OVI). A total of 3 laboratory-confirmed human rabies cases have been identified in South Africa for 2011 to date, all from Limpopo Province. One suspected case was identified in KwaZulu-Natal Province and a further two suspected cases in this province are currently under investigation.

Although rabies disease is almost always fatal, it is also completely preventable when rabies PEP is administered according to prescribed guidelines. It is crucial to consider rabies PEP for all animal-bite victims in South Africa. By evaluating the particulars of each case, including the nature of the exposure, the species and health of the animal involved, the healthcare worker should determine the need

for rabies PEP. Category 2 exposures (i.e. bites/scratches etc without bleeding) should receive 4 doses of rabies vaccine (administered intramuscularly in the deltoid muscle on days 0, 3, 7 and 14). In the case of Category 3 exposures (i.e. bites/scratches that draw blood, licking of mucous membranes or broken skin) should receive rabies immunoglobulin in addition to the 4 doses of vaccine. Rabies immunoglobulin should be infused into and around the injury as far as possible; if multiple injuries are present, the immunoglobulin can be diluted with sterile water/saline. In the case of small injury sites, remaining rabies immunoglobulin must be administered intramuscularly in the deltoid muscle opposite to that where rabies vaccine has been administered. Rabies immunoglobulin and rabies vaccine must NOT be administered into the gluteal muscles.

## References

- <sup>1</sup>Cleaveland S, Fevre EM, Kaare M, Coleman PG. Estimating human rabies mortality in the United Republic of Tanzania from dog bite injuries. *Bull World Health Organ* 2002; 80: 304-310
- <sup>2</sup>Cohen C, Sartorius B, Sabeta C, Zulu G, Paweska J et al. Epidemiology and molecular virus characterization of reemerging rabies, South Africa. *EID* 2007; 13 (12): 1879-1886
- <sup>3</sup>Weyer J, Szmyd-Potapczuk AV, Blumberg LH, Leman PA, Markotter W et al. Epidemiology of human rabies in South Africa: 1983-2007. *Virus Research* 2011; 155: 283-290



**Source:** Special Pathogens and Outbreak Response Units, NICD-NHLS

## Foodborne illness outbreaks

Numerous foodborne illness outbreaks were reported to the Outbreak Response Unit, NICD-NHLS during August. A selection of these are presented.

### Sisonke district, KwaZulu-Natal Province

On 21 July, 3 adults presented to a local hospital with dehydration, and reported vomiting, nausea, diarrhea and abdominal cramps which had started on 18 July. These persons had all consumed the same meat on 17 July. The meat (both cooked and raw) was provided by a neighbour that had attended a family cultural gathering in Mahehla.

On further investigation, it was found that 3 cows were slaughtered on 15 July for the family cultural gathering; these cows were apparently in "good health". No other cases were identified amongst those who had attended the family gathering. Raw and cooked meat samples were obtained and forwarded to the NHLS Public Health Laboratory in Durban. Non-typhoidal *Salmonella* spp was isolated from 2 of the 3 stool specimens collected. Both were identified as *Salmonella* Weltevreden by the Enteric Disease Reference Unit (EDRU) of

the NICD-NHLS.

### Nursing College, Mpumalanga Province

A hospital Infection Prevention and Control Practitioner reported a suspected foodborne illness outbreak after 45 nursing college students had been seen at the hospital on 11 August, complaining of symptoms including abdominal cramps and diarrhea since 23h00 the previous evening. They had consumed lunch and dinner at the college on 10 August; foods eaten included pumpkin, pap, pork stew, beef stew, rice, beetroot, yoghurt and ice cream.

Environmental Health Practitioners obtained available food samples, and 12 stool samples were also collected. All specimens were forwarded to the NHLS Infection Control Services Laboratory (ICSL) in Johannesburg for testing. Nothing of significance was isolated from the available food samples, but *Clostridium perfringens* was isolated from all 12 stool specimens, two of which were type A enterotoxin-positive. In addition, enterotoxin-C producing *Staphylococcus aureus* was isolated from one of the clinical specimens.

### Bela-Bela, Limpopo Province

A group of school children and teachers attended a funeral in the Bela-Bela area on 21 August, at which they ate a meal. Approximately 60 persons (including school learners and teachers) were affected; they developed diarrhoea and abdominal cramps the same evening. The cases were taken to a local hospital the following day where they were assessed at the casualty and later discharged the same day. Eight (8) stool specimens were collected. On 23 August, the school indicated that some of the cases had not yet recovered, and had developed vomiting. Thirty children were taken back to the hospital for assessment.

Further investigation revealed that the meat that was consumed at the funeral had been bought in Pretoria and transported to Bela-Bela in a car boot. The meat was then prepared 12

hours later after being refrigerated overnight. Water used to reconstitute the juice served with the meal had been collected at a borehole and transported in buckets. There were no facilities for hand washing. No food or water specimens were available for testing.

*C. perfringens* was isolated from 6 of the 8 stool specimens, and a non-typhoidal *Salmonella* spp from one of the specimens. The EDRU (NICD-NHLS) further characterised the non-typhoidal *Salmonella* isolate as *Salmonella* Anatum, a rare zoonotic serotype but one that has nevertheless been documented as the cause of numerous foodborne illness outbreaks.

**Source:** Outbreak Response and Enteric Disease Reference Units, NICD-NHLS; NHLS Infection Control Services Laboratory, Johannesburg; Kwazulu Natal Department of Health; NHLS Public Health Laboratory, Durban; Mpumalanga Department of Health

### 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.

#### **Malaria:** Greece

**Alert:** Greek health authorities have reported that since June 2011, six people with no travel history to malaria endemic areas have been infected with *Plasmodium vivax*. The cases occurred in the Laconia region of the southern Peloponnese and on Euboea, a large island north of Athens.

**The disease:** Four *Plasmodium* species are human malaria parasites (*P. falciparum*, *P. vivax*, *P. ovale* and *P. malariae*). *P. vivax* is geographically the most widely distributed cause of malaria, with the greatest burden occurring in south and southeast Asia. Although vivax malaria has been regarded as relatively benign compared with falciparum malaria, recent studies have pointed to a spectrum of severe disease that essentially resembles that of falciparum malaria: cerebral malaria, hepatic dysfunction with jaundice, acute lung injury, ARDS, pulmonary oedema, renal failure, splenic rupture, severe thrombocytopenia and haemorrhage, and

severe anaemia. First-line therapy for vivax malaria remains chloroquine (since high-grade chloroquine resistance is very rare) plus primaquine (to eradicate dormant liver stages responsible for relapses).

**Advice to travellers:** Travellers should protect themselves from day-biting mosquitoes: use insect repellents (containing 30-50% DEET), insecticide-treated bed-nets, and wear light coloured clothing. Malaria chemoprophylaxis is indicated for travellers to malaria endemic countries.

#### **Poliomyelitis:** China

**Alert:** Six additional cases of wild polio type 1 have been reported in China since 26 August 2011. Of the total 10 confirmed cases to date, six are in children under 3 years of age and four are in young adults ranging in age from 22 to 26 years of age. Cases have been reported from western China's Xinjiang Autonomous Uyghur Region.



**The disease:** Humans are the only reservoir of polioviruses; the virus is found in the intestinal tract and throat of infected individuals. Transmission occurs via the faecal-oral route or contact with saliva. Most infections are asymptomatic, while 10% of cases develop mild symptoms such as fever, malaise, nausea, and vomiting. However, after exposure and an incubation period of about one to two weeks the virus can spread from the digestive tract to the central nervous system, resulting in meningitis and neural damage with paralysis (the latter in less than 1% of cases). No specific therapy is available against the virus.

**Advice to travellers:** 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 the travellers

safety. Travellers are additionally advised to follow safe food and water practices, and practice good hand hygiene to prevent infection.

In addition to advising travellers, it is important for all countries (including South Africa) to strengthen their surveillance for AFP in order to detect any imported cases.

**References and additional reading:**

ProMED-Mail ([www.promedmail.org](http://www.promedmail.org)), World Health Organization ([www.who.int](http://www.who.int)), <http://ecdc.europa.eu/en/healthtopics/malaria/Pages/index.aspx> , <http://ecdc.europa.eu/en/healthtopics/polio/Pages/index.aspx>

Last accessed: 2011/09/21

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



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