



## INFLUENZA

### Viral watch: Influenza-like illness (ILI) surveillance programme

The 2012 influenza season started in week 21 (week ending 27 May). The number of specimens submitted for influenza testing rose to 112 in week 26 (week ending 01 July) when the influenza detection rate was 51% (Figure). During 2012 to date, a total of 193 influenza

detections have been made. Of the 182 influenza positive samples that have been subtyped, 104/182 (57%) have been identified as influenza A(H3N2), 46/182 (25%) as influenza B and 2/182 (1%) as influenza A(H1N1)pdm09. Influenza has been detected in all provinces except for North West Province.

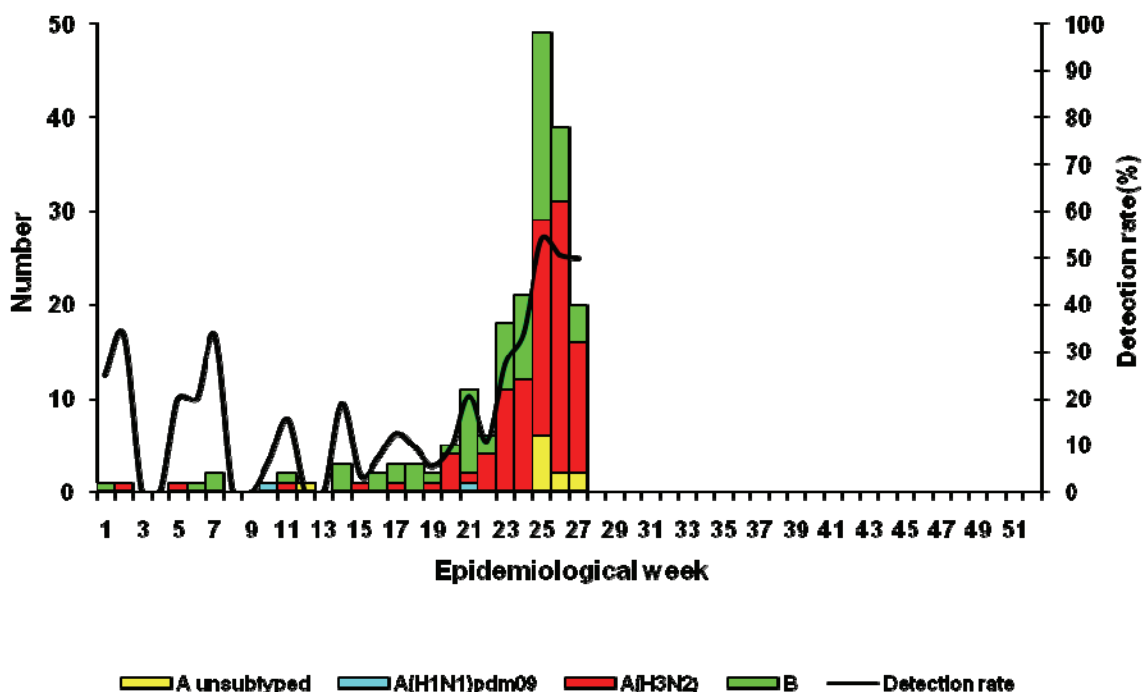


Figure: Number of positive samples by influenza types and subtypes, and detection rate by week, Viral watch surveillance programme, 2012

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

Between 1 January and 12 July 2012, 2 608 patients have been tested for influenza in the SARI programme at the five sentinel sites in four provinces (Gauteng, KwaZulu-Natal, Mpumalanga and North West). Of these, 2%

(63/2 608) were positive for influenza virus, and have been further identified as follows: 41/63 (65%) influenza A(H3N2); 21/63 (33%) influenza B, and 1/63 (2%) influenza A(H1N1) pdm09. Influenza has been detected in all of the four provinces with sentinel sites.

**Comment**

Although the influenza season has already started, healthcare workers are reminded that it is 'never too late to vaccinate' for influenza, and are encouraged to continue to vaccinate individuals in the target risk groups. During the influenza season, healthcare workers are also reminded to consider influenza in the differential diagnosis for patients presenting with respiratory illness, and to start empiric antiviral therapy where indicated. For detailed information on the clinical management of patients with influenza

and recommendations for vaccination, healthcare workers can refer to the updated edition of the Healthcare Workers Handbook on Influenza in South Africa which was published in May 2012 and can be accessed at: <http://www.nicd.ac.za/assets/files/Healthcare%20Workers%20Handbook%20on%20Influenza%20in%20SA%20-%20Final.pdf>.

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

## MENINGOCOCCAL DISEASE

Sporadic cases of meningococcal disease continue to be reported across the country, but as yet there has been no noticeable seasonal increase of laboratory-confirmed cases. Meningococcal 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 although clinical cases may be increasing already, these may not yet be reflected in the data presented.

By the end of epidemiological week 26 (week ending 1 July), a total of 86 laboratory-confirmed cases was reported to the bacteriology laboratory at the Centre for Respiratory Diseases and Meningitis (CRDM), NICD-NHLS (Table). Twenty-four cases have been reported in children <1 year of age this year so far, similar to the number of cases for the equivalent time period and age group in 2011 (n=20).

The reported cases have diverse serogroups, which is in keeping with sporadic endemic disease in the country. Serogroup data were available for 58/86 (67%) of cases. Serogroup B and W135 have been identified most commonly this year (21/58, 36% serogroup B and 23/58, 40% serogroup W135). Other serogroups included C (12%, 7/58) and Y (12%, 7/58).

An increase in the number of meningococcal cases is usually identified in the winter and

spring seasons, so there should be a high index of suspicion for meningococcal disease in patients who 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.

**Table: Number of laboratory-confirmed meningococcal disease cases reported until end of week 26 by province, 2011 and 2012**

Province	2011	2012
Eastern Cape	18	11
Free State	7	0
Gauteng	68	35
KwaZulu-Natal	8	13
Limpopo	3	1
Mpumalanga	8	1
Northern Cape	5	0
North West	1	1
Western Cape	17	24
<b>South Africa</b>	<b>135</b>	<b>86</b>

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

## RABIES

There have been six laboratory-confirmed human rabies cases for 2012 to date, originating from Limpopo (n=3) and KwaZulu-Natal (KZN) (n=3) provinces. An additional clinical case of rabies in Eastern Cape Province with a classical clinical presentation, known exposure and fatal outcome was also reported, but unfortunately could not be confirmed as no specimens were available for testing. The 4-year-old child from Umlazi (KZN) with suspected rabies reported in the June 2012 Communiqué remains in a coma. In April 2012, the child experienced two category-3 exposures a week apart, from two different dogs. He received 3 rabies vaccines after the second exposure (on days 0, 3 and 7) but no rabies immunoglobulin. Both dogs died and were buried without any rabies tests being performed. The dogs were subsequently exhumed and both tested positive for rabies on PCR. This finding together with the clinical presentation supports the likely diagnosis of rabies in this case. Numerous serial specimens including saliva, nuchal tissue and CSF have tested negative by PCR for rabies to date, but ante-mortem rabies tests do have limitations in terms of sensitivity. Anti-rabies IgG is positive, but in this patient likely reflects vaccine response. The presence of anti-rabies immunoglobulins in CSF would suggest rabies disease; however, the IgM is negative and the IgG titres identical to those in serum. While the epidemiology, clinical and some laboratory features are in keeping with rabies, there is no definitive confirmation and investigations for rabies and other causes of encephalitis will continue. The child remains in a serious condition almost 8 weeks after the onset of illness. Long survival periods have been previously reported in a small group of patients with rabies disease all of whom had received incomplete post-exposure prophylaxis; however, all of these patients had severe neurological sequelae.

An intensive dog vaccination campaign was launched by the KZN Department of Agriculture, Forestry and Fisheries in June 2012, in response to the ongoing rabies outbreak in the province. Winterton, Bergville and Ladysmith areas have been targeted during this campaign, and this has led to a dramatic decrease in the number of confirmed dog rabies cases in these outbreak

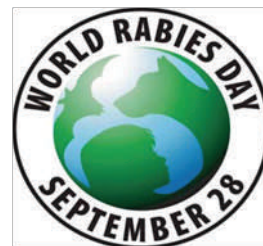
areas. Of major interest is a case of confirmed rabies in a wild baboon in the Winterton area; the baboon was noted to be aggressive and salivating. The virus was characterised as canine biotype. No other cases have been noted in this baboon's troop. This is the third case of laboratory-confirmed rabies in a baboon in South Africa, and is a highly unusual event. The previous cases were in a baboon in Middelburg, Eastern Cape Province and in a captive baboon in Duiwelskloof, Limpopo Province.

Historically, KwaZulu-Natal Province has been the focus of the rabies epidemic in South Africa. The disease has been ongoing in domestic dog populations in the province since the late 1970s, and has still not been brought under control. Human cases are concomitantly reported each year (Table). Over the last five years, rabies has also been reported in other areas and provinces where it was previously under control, most notably in Limpopo Province (LP). In 2006, a total of 22 laboratory-confirmed human cases was reported in LP, coinciding with an epizootic of rabies in dogs in the province's Vhembe district. Since 2006, human rabies cases are reported annually in LP, with a total of 37 laboratory-confirmed cases to date. An outbreak of rabies in domestic dogs in southwest Johannesburg during 2010 to 2011 marked the first outbreak of dog rabies with sustained transmission in this area, and also resulted in one confirmed human case (the first documented locally-acquired human rabies case in Johannesburg).

The only way to successfully break the chain of rabies transmission and prevent outbreaks is through appropriate vaccination of domestic dogs. When dogs are not vaccinated as required, susceptible dog populations accumulate and increase the risk for potential rabies outbreaks. When humans are exposed to suspected or confirmed rabid animals, prompt and appropriate rabies post-exposure prophylaxis (PEP) is of paramount importance and should be regarded as a medical emergency. Pre-exposure vaccination is only recommended for persons working in high-risk exposure settings, for example veterinarians, animal health workers, animal care workers, and certain laboratory workers. The guidelines for

appropriate rabies PEP are available at: <http://www.who.int/rabies/human/postexp/en/>. Further information regarding rabies in South Africa is available in the national guidelines document available at: <http://nicd.ac.za/assets/files/Rabies-Guide-2010-small.pdf>.

September 28 will mark the sixth World Rabies Day. This day is dedicated to educating communities around the world on the prevention and control of this deadly disease. For more information on what will be happening throughout the world, visit [www.worldrabiesday.org](http://www.worldrabiesday.org).



**Source:** Centre for Emerging and Zoonotic Diseases, NICD-NHLS.

**Table: Numbers and provincial distribution of laboratory-confirmed human rabies cases in South Africa, 2005 to June 2012**

Province Year	KZN	EC	MP	NC	FS	NW	LPP	WC	GP	Total
2005	3	3	0	0	1	0	0	0	0	7
2006	4	4	0	0	0	1	22	0	0	31
2007	8	5	0	0	0	0	1	0	0	14
2008	5	8	1	0	0	0	3	0	0	17
2009	4	7	2	0	0	0	2	0	0	15
2010	3	2	1	0	0	0	3	0	1	10
2011	2	1	0	0	0	0	3	0	0	6
2012	3	0	0	0	0	0	3	0	0	6
Total	32	30	4	0	1	1	37	0	1	106

## SUSPECTED OUTBREAK OF ACUTE PULMONARY HISTOPLASMOSIS, GAUTENG PROVINCE

A 28-year-old man from Pretoria developed an influenza-like illness with abrupt onset on 25 May 2012. His symptoms included backache, fever and rigors. He was admitted to a private hospital in Pretoria five days later with progressively worsening dyspnoea, a non-productive cough and pleuritic chest pain. Together with eight other persons, the index patient had gone on an expedition to the Sterkfontein cave complex on 11 May 2012 (exactly two weeks prior to the onset of his symptoms). The expedition group had accessed 'Bat Cave' through the cavern roof via a fixed ladder. They had crawled into areas of the cave that were not often explored, and noticed fine, soft dirt on the cave floor that was easily aerosolised. The group wore hard hats but no masks, and stayed underground for approximately five hours. Four other members of the group also developed an acute influenza-like illness approximately two weeks after the expedition; one other person was

admitted to the same private hospital with a diagnosis of acute community-acquired pneumonia. The two hospitalised patients were treated empirically for an acute community-acquired pneumonia, and the attending clinician elected to add intravenous liposomal amphotericin B once histoplasmosis was deemed a possible diagnosis. The three other patients were treated with oral itraconazole as outpatients. Urine specimens from the hospitalised patients were submitted to the NICD for *Histoplasma capsulatum* antigen testing; however, the investigational assays were negative for both patients. Sputum samples from both patients have not yielded growth of *H. capsulatum*.

### Epidemiology of acute pulmonary histoplasmosis in South Africa

The first outbreak of acute pulmonary histoplasmosis (APH) in South Africa was described in the former Transvaal Province in 1953 among

three cave-explorers; this was followed by the description of two more outbreaks. Cases were also described among miners who had entered old, disused mine shafts in the then Transvaal Province in the 1960s. Two outbreaks were described in the former Cape Province in 1963 (Cango caves) and 1979 (De Hoop caves) and another outbreak was described more recently in the 1990s. *H. capsulatum* was also isolated from environmental samples and from white-tailed rats that had been exposed to aerosols from cave soil samples in the former Transvaal Province.

**Diagnosis and treatment of APH**

Several laboratory tests are currently available for the diagnosis of APH. Culture of *H. capsulatum* from a sputum sample would definitively establish the diagnosis of APH but is only positive among 10-15% of immunocompetent patients. The organism may be detected in Wright-Giemsa stained peripheral blood smears in up to 40% of patients with APH. A complement fixation test can also establish the diagnosis of APH retrospectively by detecting a fourfold increase in antibody titres between acute and convalescent sera; however, this test is not available in South Africa. The precipitin assay to detect H and M bands is also not currently available. However, an investigational assay that detects polysaccharide antigen in urine has recently been introduced by the Mycology Reference Laboratory at NICD-NHLS (+27 11 555 0325); this test is still being vali-

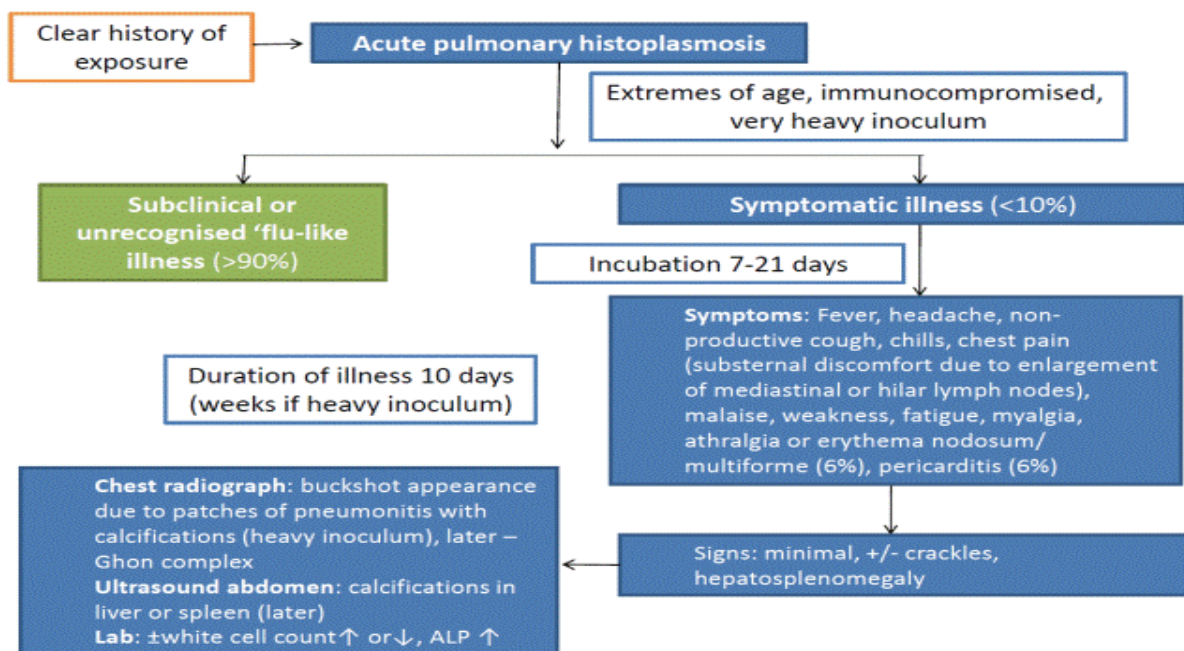
dated and requires submission of a urine specimen that has been refrigerated after collection. The sensitivity of a well-validated urine antigen assay for diagnosis of APH is reported to be 20%.

The vast majority of patients with APH develop a mild, self-limiting illness; however, patients who have been exposed to a large fungal inoculum or are immunosuppressed may develop an acute symptomatic illness that may become progressively worse (Figure). Mild-to-moderate APH does not usually require treatment, but oral itraconazole for 6-12 weeks may be indicated for patients who have symptoms for >one month. Patients with moderately-severe or severe APH may require amphotericin B for 1-2 weeks followed by oral itraconazole for a total of 12 weeks (Wheat LJ, et al. Clin Infect Dis 2007).

**Prevention**

Cave-explorers should be made aware of the risk of APH before entering caves where cases have occurred previously or where the risk is unknown. The use of N95 particulate respirators may also be considered to minimise exposure especially among persons at risk for disseminated disease.

**Source:** Centre for Opportunistic, Tropical and Hospital Infections and Division of Public Health Surveillance and Response, NICD-NHLS.



**Figure: Features of acute pulmonary histoplasmosis**

## 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
<b>Dengue fever:</b> Thailand, Vietnam, India	<p><b>Thailand:</b> Cases are reported to be on the increase with over 18 569 cases and 19 deaths reported since January 2012.</p> <p><b>Vietnam and India:</b> Ongoing reports of cases.</p>	Dengue viruses are transmitted by <i>Aedes</i> spp mosquitoes, which usually bite during the daytime. There are no available vaccines. When travelling to a dengue-risk area, use mosquito repellents containing DEET to avoid being bitten. Wear long-sleeved pants and shirts during the day and stay in well ventilated (fan/air-conditioned) rooms where possible. Burning mosquito coils at night and sleeping under a mosquito net in a well ventilated room is also helpful.
<b>Cholera:</b> Cuba, Ivory Coast, Uganda, DR Congo	<p><b>Cuba:</b> The first cholera outbreak in over a century has affected hundreds of people and claimed at least 15 lives to date. The majority of cases are from the province of Granma and specifically the city of Manzanillo on the south western coast, but there has been at least one confirmed case of cholera in the capital city, Havana.</p> <p><b>Ivory Coast:</b> The outbreak that began in January 2012 is ongoing.</p> <p><b>Uganda:</b> The outbreak that began in January 2012 is ongoing and affecting many districts.</p> <p><b>DR Congo:</b> 934 confirmed cases and 16 deaths have been reported from Province de Bas-Congo.</p>	<i>Vibrio cholerae</i> is transmitted through the faecal-oral route by drinking contaminated water or eating contaminated food. Without urgent rehydration, cholera can kill in a matter of hours due to severe dehydration. Travellers are advised to eat fruit and vegetables that they personally peel after washing their hands. Avoid foods and beverages (including ice) from street vendors. Eat food that has been thoroughly cooked and while still steaming hot. Drink chlorinated, boiled, or recommended bottled water.

### References and additional reading:

ProMED-Mail ([www.promedmail.org](http://www.promedmail.org));  
World Health Organization ([www.who.int](http://www.who.int)).  
Last accessed: 17/07/2012.

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