

Communicable Diseases Communiqué

Volume 8, No. 7

July 2009



Update - Pandemic influenza A (H1N1) 2009

As of 16 July 2009, 104 laboratory-confirmed cases of pandemic influenza A (H1N1) 2009 [previously termed novel influenza A (H1N1 swine origin)] infection have been reported in South Africa. Eight of the nine provinces of South Africa have reported cases, with the majority (59%, n=61) residing within Gauteng Province, followed by Western Cape (13%, n=13) and Eastern Cape (12%, n=12) provinces. The majority of cases (59%, 61/104) were male. Ages range from 4 years to 70 years (mean 25.3 years, median 21.1 years). Almost all the confirmed cases have presented with mild illness with or without documented fever. To date lower respiratory tract infection was documented in four of the affected persons, three of whom required hospital admission. All made a full recovery.

In all the confirmed cases, pandemic influenza A (H1N1) 2009 was suspected, based on the case definition of an influenza-like illness plus travel from an area with community-wide transmission or history of an epidemiological link to a confirmed or suspected case. Specimens were submitted, appropriate isolation precautions were instituted and treatment with oseltamivir was commenced where appropriate. Pandemic influenza A (H1N1) 2009 was confirmed by RT-PCR using the specific primers for this virus. All the patients have recovered well, and contacts were followed up.

Of the 104 confirmed cases, a history of international travel was documented in 43% (n=45), whilst the majority (57%, n=59) of infections were acquired locally. Of the 59 individuals infected within South Africa: 78% (46/59) were linked to a university sporting event held in Gauteng Province, 5% (3/59) were linked to a second sporting event hosted in Northern Cape Province (with some participants attending both events), 6% (4/59) accommodated visitors from overseas, 8% (5/59) had close

household contact to a confirmed case, and the final 1% (1/59) reported no clear epidemiological links to probable or confirmed cases.

It is now clear that the pandemic virus has been established throughout the country, and that sustained community transmission is inevitable (defined as ≥ 4 confirmed cases without epidemiological links to a confirmed case). Moving forward, a strategy that concentrates on the detection, laboratory confirmation, and investigation of all cases, including those with mild illness, is extremely resource-intensive; leaving little capacity for the monitoring and management of severe cases. In addition it diverts limited resources away from managing other diseases such as HIV and TB. In line with a World Health Organization (WHO) recommendation, it has now been decided to stop routine laboratory testing of all suspected cases of pandemic influenza infection.

As of 16 July 2009, the laboratory testing strategy has been modified to only conduct testing if a clinical decision warrants these investigations. Laboratory testing of mild illness is not recommended, as it provides very little advantage to the clinical management of individual patients. There is, however, a critical to collect specimens and closely monitor unusual events, such as: clusters of cases of severe or fatal pandemic influenza A(H1N1) infection, clusters of respiratory illness requiring hospitalization, or unexplained or unusual clinical patterns associated with serious or fatal cases. Epidemiological and laboratory investigations into these categories will enable continued monitoring of virological characteristics, and will inform case management, future vaccine development, and public health interventions for the current outbreak. Laboratory testing capabilities are currently in a

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process of being decentralized from NICD towards diagnostic laboratories throughout the country. Private sector laboratories have begun to offer in-house diagnostic services for patients seen at private sector health facilities. Whilst, testing of patients attended to by public sector healthcare facilities will soon be conducted by selected NHLS sites. NICD will continue to support both sectors until such time as these systems have been implemented.

The 2009 influenza pandemic has spread internationally with unprecedented speed in less than six weeks. Further spread within affected

countries and to new countries is considered inevitable. To date, this pandemic has been characterized by mild symptoms in the overwhelming majority of patients, who usually recover, often without medical treatment, within a week following disease onset. Severe illness and mortality have been rare events, identified in a small number of patients not only with co-morbidity such as chronic respiratory illness, obesity or pregnancy, but also in a small group of young otherwise healthy individuals (a specific feature of influenza pandemics).

Source: Epidemiology Division; Department of Virology; NICD, NHLS, Stellenbosch University, and Bouwer and Partners laboratories.

Seasonal influenza update

The number of specimens submitted for seasonal influenza is beginning to decrease, as has the number of isolates. At the peak of the season, week 24 (week starting 8 June), we received 412 specimens compared to 269 specimens for week 26. To date a total of 1184 influenza isolates have been made i.e. 1166 influenza A and 18 influenza B; 1096 of the influenza A isolates have so far been further

identified as A H3N2. These isolates have come from all 9 provinces.

A weekly update of influenza surveillance data is available on the NICD web site: www.nicd.ac.za.

Source: Epidemiology Division, Respiratory Virus and Viral Diagnostics Units, NICD

Measles outbreak

On 25 June 2009, measles was confirmed in a 16-year-old male learner at a Pretoria high school. Subsequently, six more cases were confirmed from the same school. The WHO case definition for measles was used for active case finding as part of the outbreak investigation. To date measles has been confirmed in 12 patients from Tshwane District. Of these cases, ten were male and two were female. Ages ranged from four to 17 years. The majority (n=7) of cases were from the same high school. One patient was a household contact of one of the school attendees. Three of the patients, including two siblings, were not linked to the school.

Health messages regarding precautions to avoid infection, what to do when infected, and preparations for vaccination of all learners at the high school, were distributed within the school and to parents through letters, e-mails and faxes.

Requests for consent for vaccination of the children and advice to visit the nearest health facility for those who will miss the opportunity for vaccination were distributed. A total of 125/1500 (8%) of the learners at the school was vaccinated. The low response was expected as vaccination of the learners was conducted on the last day of the second term, before the school holidays.

This is the second outbreak in Tshwane District in two months, despite a 91% reported immunization coverage. Genotype B3 strain was isolated from both outbreaks. However, an imported case due to genotype D8 was also isolated in the first outbreak. Both genotypes have not been circulating in South Africa. Genotype B3 was first isolated in Gambia and has been reported endemic in West and Central Africa, while D8 was first described in United

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Kingdom and is currently circulating on the Indian sub-continent and Ethiopia.¹

While genotype B3 is an imported strain, epidemiological investigations to identify the source and to establish the link between the recent outbreak and the one that occurred in March are still ongoing.

References:

1. Riddell MA, Rota SJ, Rota AP. Review of the temporal and geographical distribution of measles virus genotypes in the prevaccine and postvaccine eras. *Virology*. 2005 Nov 22;2:87

Source: SA-FELTP, Outbreak Response Unit, Respiratory Virus and Viral Diagnostics Units, Molecular Measles Unit, NICD; Communicable Disease Directorate, Tshwane District and Gauteng Province

Hepatitis A outbreak update

Following the previously reported 24 cases of hepatitis A in Tshwane District, 9 additional cases have been identified bringing the total to 33. Of these, 22 (67%) were laboratory-confirmed, 7 (21%) were probable and 4 (12%) were suspected cases. Two suspected cases tested negative for anti-HAV (IgM), and were excluded. Of the remaining 31 cases, 15 were children under the age of 18 years and 16 were adults; 55% (n=17) were female. Ages ranged from 18 months to 40 years with a median of 19 years.

Most cases 15 (48%) were reported in the Pretoria North area. Seven household clusters were identified: one with four cases, two with three cases each and another four with two cases each. The majority of the cases (n=19, 61%) have a link to three schools and two crèches. Interviews were conducted with 28/31 cases to obtain detailed clinical, demographic and epidemiological information. Among these, the most common symptoms reported were jaundice (n=21, 75%), dark urine (n=20, 71%), loss of appetite (n=19, 68%) and

vomiting (n=18, 64%). A total of 4 (14%) cases were hospitalized, and 1 (3%) case relapsed and still had jaundice at the time of the interview. One death, an 18-month-old baby, was reported and notified to the Department of Health as fulminant hepatitis A. There were however no laboratory results to confirm the diagnosis. Post-mortem results are being obtained.

During the interview cases were asked about possible risk factors including work/school, gatherings, water sources and eating out. Although some clusters involving households with children attending the same school and after school care were identified, no common epidemiological factor was found that could link all cases. An analytical study may determine a common source.

Source: SA-FELTP, Outbreak Response Unit, NICD; Communicable Disease Directorate, Tshwane District and Gauteng Province

Food-borne disease outbreak

A large food-borne disease outbreak affecting 167 individuals was identified during June in the Sisonke Health District of KwaZulu-Natal Province. The outbreak occurred after food was served at an event attended by children from a local primary school and community members. The cases presented with symptoms including: stomach cramps, diarrhoea, dehydration and vomiting with onset approximately 12 hours after consumption of the implicated meal.

Local Department of Health authorities investigated the outbreak and responded accordingly. The majority of cases were treated utilising a mobile clinic. Fifty-five individuals were referred to a local hospital for supportive care, where 1 case was admitted for further treatment. All cases recovered without complications. Stool samples were collected from 5 individuals and submitted to the NHLS to investigate the aetiology of this outbreak; however, no pathogenic

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bacteria were identified from culture. No left-over food was available for laboratory testing. Health education activities including methods of self-rehydration and personal hygiene to prevent future infections were conducted with all affected individuals as well as local community members. Food-borne disease outbreaks are common in South Af-

rica. It is important for local health authorities to investigate these outbreaks to identify breakdowns in food safety, and to prevent the occurrence of similar events.

Source: Communicable Disease Control and Environmental Health Practitioners, Sisonke Department of Health, KwaZulu-Natal Province; Outbreak Response Unit, NICD

Rabies update

Rabies was confirmed by RT-PCR on two saliva specimens submitted from an 11-year-old child from Mpumalanga Province this month. The patient was admitted to hospitals in Mpumalanga with pneumonia, and then transferred to a Gauteng hospital intensive care unit. Although there was no history of animal exposure, residence in an area experiencing a current rabies outbreak, a history of 'acute aggression' in the patient, hypersalivation and generalized hypotonia, and a normal laboratory CSF examination, were suggestive of rabies and appropriate specimens were requested by the NICD.

Two further probable cases of human rabies have been recorded from Mpumalanga Province this year, but could unfortunately not be confirmed by laboratory testing. There is currently an outbreak of the disease in dogs in the province where it is now

being reported from districts that have not recorded rabies cases for many years. Rabies should be considered as a differential diagnosis in all patients who present with encephalitis. Specialized laboratory testing is always required to confirm infection in patients. The following specimens should be submitted to the NICD for testing: for antemortem cases, saliva, cerebrospinal fluid, nuchal skin biopsies and serum, and for post-mortem cases, rain and nuchal skin biopsies.

To date a total of nine human rabies cases has been laboratory-confirmed for South Africa in 2009 from Eastern Cape (n=4), KwaZulu-Natal (n=3), Mpumalanga (n=1) and Limpopo (n=1) provinces.

Source: Special Pathogens Unit and Epidemiology Division, NICD

Meningococcal disease

Sporadic cases of meningococcal disease continued to be reported across the country in keeping with trends in previous years. By the end of epidemiological week 27, a total of 174 laboratory-confirmed cases had been 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 were available for 134/174 (77%) of cases. The predominant serogroup nationally for 2009 to date was serogroup W135 (51%, 68/134). The remaining serogroups included: A (1%, 2/134), B (25%, 34/134), C (14%, 19/134),

and Y (8%, 11/134).

The winter season typically brings an increase in cases of meningococcal disease. Accordingly, 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.

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

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Table. Number of laboratory-confirmed meningococcal disease cases reported by week 27, 2008 and 2009, by province.

Province	2008	2009
Eastern Cape	11	14
Free State	7	3
Gauteng	96	87
KwaZulu-Natal	7	15
Limpopo	1	.*
Mpumalanga	16	15
Northern Cape	4	2
North West	3	5
Western Cape	27	33
South Africa	172	174

*No cases reported

Microsporidial keratitis

A 34-year-old man had a one-month history of progressive blurring of vision and foreign body sensation of both eyes. He was HIV-positive with a CD4+ T-cell count of 16 cells/mm³ and was receiving antiretroviral treatment. After fluorescein staining, diffuse punctate epithelial erosions of the conjunctiva and cornea were visible. A clinical diagnosis of microsporidial keratoconjunctivitis was made. Corneal scrapings were stained with calcofluor white and Giemsa stains, and revealed spores characteristic of microsporidia. Sputum, stool and urine samples were negative for microsporidia. Two-hourly treatment with topical fumagillin suspension was begun. The patient also received a course of oral albendazole (400 mg bd for 2 weeks). Three days later there was a marked improvement in symptoms and clinical signs. Over the following weeks the fumagillin was tapered to a qid dosing schedule. The keratoconjunctivitis resolved two months after treatment had been started, and visual acuity improved.

The microsporidia are a group of unicellular, intracellular protozoan parasites. They occur ubiquitously in the environment and can infect a wide range of hosts. Only ten cases of human microsporidiosis had been described prior to the AIDS epidemic. Diarrhoea is the most common presentation of microsporidial disease in the immunocompromised, but other presentations are

possible, as illustrated by this patient. The first case of microsporidial keratoconjunctivitis in a patient with AIDS was reported in 1990.

Microsporidial keratoconjunctivitis is a well-recognized opportunistic infection in patients with advanced AIDS. In this patient the combined use of topical fumagillin and albendazole was effective therapy. There are two distinct clinical presentations of ocular microsporidiosis. Stromal keratitis may occur in immunocompetent patients and is usually unilateral and caused by *Nosema*, *Vittaforma* or *Trachipleistophora* genera. The second, more common type is a diffuse epithelial keratoconjunctivitis in immunocompromised patients that is usually bilateral and is caused by species of the genus *Encephalitozoon*, which can also cause infection of the upper and lower respiratory, genitourinary and intestinal epithelium. Suitable specimens are conjunctival or corneal scrapings that can be variously stained to demonstrate the characteristic spores. Different genera can be identified by electron microscopy.

If microsporidiosis is clinically suspected, please contact the Parasitology Reference Unit for advice before taking specimens (011 555 0304/08/11).

Source: Parasitology Reference Unit, NICD; Department of Ophthalmology, Johannesburg Hospital and University of the Witwatersrand

Management of gonorrhoea in South Africa

New STI guidelines for managing sexually transmitted infections (STIs) in South Africa were produced in 2008 by the National Department of Health. The guidelines are available from the National Department of Health and, to assist with accessibility, an electronic PDF copy is also available on the NICD website (www.nicd.ac.za). Ciprofloxacin should no longer be used to treat presumptive gonococcal infections due to high prevalence of resistance within South Africa. For those doctors and nurses able to access oral cefixime, a single dose 400mg dose is the current treatment of choice for presumptive gonorrhoea. It should be given with doxycycline 100mg 12 hourly for 7 days to cover the possibility of co-existent chlamydial infection. Pregnant women, who are unable to receive doxycycline, may receive erythromycin 500 mg 6 hourly for 7 days (old STI guidelines) or amoxicillin 500mg 8 hourly for 7 days (new STI guidelines) instead. If clinicians are unable to access cefixime, then single dose intramuscular ceftriaxone 250mg should be used as the alternative

first-line therapy. For those working in private practice without access to cefixime and who have patients unwilling to receive the injectable ceftriaxone, there is the possibility to prescribe single dose cefpodoxime proxetil 200mg. However, given the lower efficacy of cefpodoxime in treating gonococcal infections compared to cefixime, it is recommended to prescribe this antimicrobial agent with single dose 1g azithromycin for co-existent chlamydial infection (i.e., in lieu of doxycycline, erythromycin or amoxicillin). Azithromycin at the 1g dose has some anti-gonococcal activity and will improve the treatment outcome when given in combination with cefpodoxime. It is important to note that azithromycin should never be used as a single dose therapy for gonorrhoea as resistance develops easily and treatment failures will occur.

Source: Sexually Transmitted Infections Reference Centre (STIRC) and Epidemiology Division, NICD

This communiqué is published by the National Institute for Communicable Diseases (NICD) 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.

