



Outbreak of highly pathogenic avian influenza (H5N2) in ostriches: Western Cape Province

Highly pathogenic avian influenza (HPAI) H5N2 has been identified amongst ostriches on five commercial ostrich farms in Oudtshoorn and Uniondale areas of Western Cape Province. Diagnosis was confirmed on laboratory tests including serology and PCR. Ostrich mortalities have been observed in young chicks on one of the farms to date. Destruction of infected flocks (ostriches) as a precautionary measure to prevent further spread of the disease has been implemented.

The outbreak has raised concerns about risks to humans exposed to infected birds. Available data indicates that HPAI (H5N2) is able to infect humans, but to a very limited extent. It may cause conjunctivitis, or a mild respiratory illness.

Studies conducted in Eastern Cape Province by the NICD-NHLS during the 2004 outbreak of HPAI (H5N2) in ostriches showed that there was a very low risk of transmission to humans in close contact with infected birds. Abattoir workers, animal health workers and veterinary workers exposed to sick or dead birds during high-risk procedures, with limited personal protection in place were evaluated. Three of 130 persons tested had evidence of infection (positive serology titres of >1:40 by microneutralization assay), but there was no severe disease. A number of ostrich farm workers had mild respiratory symptoms and/or conjunctivitis but these could not be attributed to avian influenza owing to the high background

of seasonal respiratory disease, environmental allergens, dust and smoking. There is no evidence that HPAI (H5N2) is transmitted from person to person.

The public health response to the HPAI (H5N2) outbreak in the Western Cape Province has included the following:

1. Surveillance for human HPAI (H5N2) cases has been initiated in potentially exposed persons on farms and abattoirs. An advisory for healthcare workers has been issued, which gives the criteria and procedures for laboratory testing, as well as recommendations for management of potential cases ([click here to download](#)).
2. Preventing human HPAI (H5N2) infections through promoting the use of personal protective equipment, good respiratory etiquette and hand-hygiene among high-risk groups ([click here to download](#)).
3. Vaccinating high-risk groups against seasonal influenza strains. Although the current influenza vaccine offers no protection against HPAI (H5N2), symptoms of seasonal influenza infection overlap with HPAI (H5N2) infection in humans. Vaccinating high-risk groups will minimise confounding illness due to seasonal influenza.

Source: Outbreak Response and Respiratory Virus Units, NICD-NHLS; Department of Agriculture, Forestry and Fisheries; Department of Health

Rabies

One case of human rabies was confirmed for 2011 to date. The patient, a 46-year-old male from Matshavhawe, Limpopo Province, was bitten on the leg by a dog on 1 February 2011. The dog died 3 days after this incident but it is not clear if any rabies testing was done on the animal. The patient did not seek any medical attention at the time of the bite. He presented to a clinic approximately 5-6 weeks later with

weakness in the leg that was injured, and parasthesias at the bite wound site (which had healed by then). He complained of feeling generally unwell, and reported nausea and vomiting. On examination he was pyrexial and noted to have difficulty in communicating appropriately. The patient died a few days after being admitted to hospital.

In addition, another suspected case of rabies was identified from Matikwane, Mpumalanga Province. A 10-year-old boy was bitten below the right eye about one month before the onset of illness. The child was not taken for medical treatment following the dog bite, but received first aid at home. He then presented to hospital with severe restlessness and agitation necessitating restraint and sedation, but was afebrile. His parents decided to take him home soon after hospitalisation, in order to receive traditional herbal treatment. The patient died at home shortly thereafter. A single saliva specimen from the patient was

negative for rabies. Nevertheless, this does not exclude a diagnosis of rabies, and ideally multiple saliva specimens and possibly nuchal biopsies should be submitted for testing in order to exclude/confirm the diagnosis. Rabies antigen detection on brain biopsy specimens remains the gold standard for diagnosis of rabies in humans.

Source: Special Pathogens and Outbreak Response Units, NICD-NHLS; Onderstepoort Veterinary Institute of the Agriculture Research Council; Department of Health

Rift Valley fever

We have observed an escalation in the number of new Rift Valley fever (RVF) virus infections in recent weeks and continue to encourage clinicians to collect specimens and complete a case investigation form for all cases meeting the suspected RVF case definition (see the Healthcare Workers Handbook on RVF available on the [NICD-NHLS website](#)).

From 1 January to 19 April 2011, a total of 23 laboratory-confirmed human RVF infections has been identified, with zero fatalities. Cases were reported from Eastern Cape (n=12), Free State (n=3), Northern Cape (n=2) and Western Cape (n=6) provinces. Most cases work regularly

with animals within the farming (n=17, 74%), veterinary (n=3, 13%) or hunting (n=2, 9%) sectors. Prior to onset of illness, 87% (20/23) of cases report direct contact with infected animal tissue and/or body fluids, 61% (14/23) report mosquito bites, 26% (6/23) report acquisition and handling of meat not sourced from a retail outlet (i.e. informal slaughter), and 13% (3/23) report consuming unpasteurised milk.

Source: Special Pathogens and Outbreak Response Units, NICD-NHLS; Department of Health; Department of Agriculture, Forestry and Fisheries

Influenza surveillance

Viral Watch

The number of specimens submitted for respiratory virus testing has been increasing slowly. To date (18 April 2011), 58 specimens were received from Viral Watch sites in April, compared to 27 in January, 40 in February and 81 in March. Influenza A (H1N1) 2009 virus was detected in 14 cases, 10 of whom had travelled in Europe or the USA shortly before the onset of symptoms. Six were identified as influenza B, five with a history of travel, and one as influenza A (H3N2) from a patient who had travelled to Europe and Canada. The start of the annual influenza season is defined as the week where the influenza detection rate has risen above 10% and stays there for two consecutive weeks or more. To date the influenza detection rate has remained below 10%.

Severe Acute Respiratory Infection (SARI)

From 1 January to April 19, 2011, 1 445 patients were enrolled into the SARI program. Of 1 443 specimens tested thus far, only nine (0.6%, 9/1 443) were positive for influenza; six influenza B and three influenza A (H1N1) 2009 were detected. The respiratory viruses that were commonly detected include rhinovirus in 30% (428/1443), RSV (respiratory syncytial virus) in 18% (258/1443) and adenovirus in 14% (206/1443).

Source: Divisions of Epidemiology and Virology, NICD-NHLS

Foodborne illness outbreak

On 7 April 2011, the NICD-NHLS was contacted by the NHLS Infection Control Services Laboratory (ICSL) to assist in investigation of a possible outbreak for which samples had been submitted for analysis. The specimens were submitted by an environmental health practitioner (EHP), from Ehlanzeni district (Mpumalanga Province). On follow up with the EHP, and subsequently with the infection control nurse at Themba Hospital, the following information was gathered. The incident occurred in a nursing college on 3 April 2011; cases started presenting \pm 3 hours after dinner, which was served at 6pm. At least 153 people had eaten the meal, which consisted of polony sandwiches and fried chicken. Ten cases (aged 19 – 31 years) were seen at Themba Hospital, mostly with diarrhoea \pm other symptoms including abdominal cramps and vomiting; none of the cases required hospitalisation. It

was reported that there were many other cases that experienced symptoms but did not seek medical attention.

Five clinical specimens (four rectal swabs and one stool specimen) and numerous food samples (polony sandwiches and fried chicken) were collected and sent to ICSL for analysis. *Clostridium perfringens* was isolated from four clinical specimens, and enterotoxin-producing *Staphylococcus aureus* was isolated from a fried chicken sample.

Source: Outbreak Response Unit, NICD-NHLS; Department of Health; NHLS Infection Control Services Laboratory

Furuncular myiasis due to *Cordylobia anthropophaga*: the tumbu fly

A number of human cases of tumbu fly (also known as the 'mango' or 'putsi' fly) infestations have been reported. The increase in the number of cases is most likely related to the recent marked increase in seasonal rainfall, leading to the expansion of the fly's normal range (the warmer northern and eastern parts of the country). The adult female tumbu fly (*Cordylobia anthropophaga*) deposits eggs on unwashed garments or urine- or faeces-contaminated sand, soil or clothing. The larvae (maggots) hatch and on contact with skin, penetrate and result in boil-like skin lesions (furuncular myiasis) (Figure). The lesions may be complicated by secondary bacterial infection. The condition is readily treated by the application of petroleum jelly or liquid paraffin to the lesions, leading to suffocation of the maggots and lubrication of the cavity in the skin; usually they then emerge or are easily expressed. Incision or use of forceps or other instruments is unnecessary and should be avoided, as inflammation or secondary infection is more likely if the larva is damaged. Washing should not be laid on the ground to dry. Ironing of clothes will kill eggs or larvae. Domestic dogs and rodents are commonly

affected, sometimes with large numbers of lesions. Affected dogs should be dipped in an appropriate insecticide solution, as for prevention of tick or flea infestation, under veterinary guidance.



Figure: Furuncular myiasis lesion

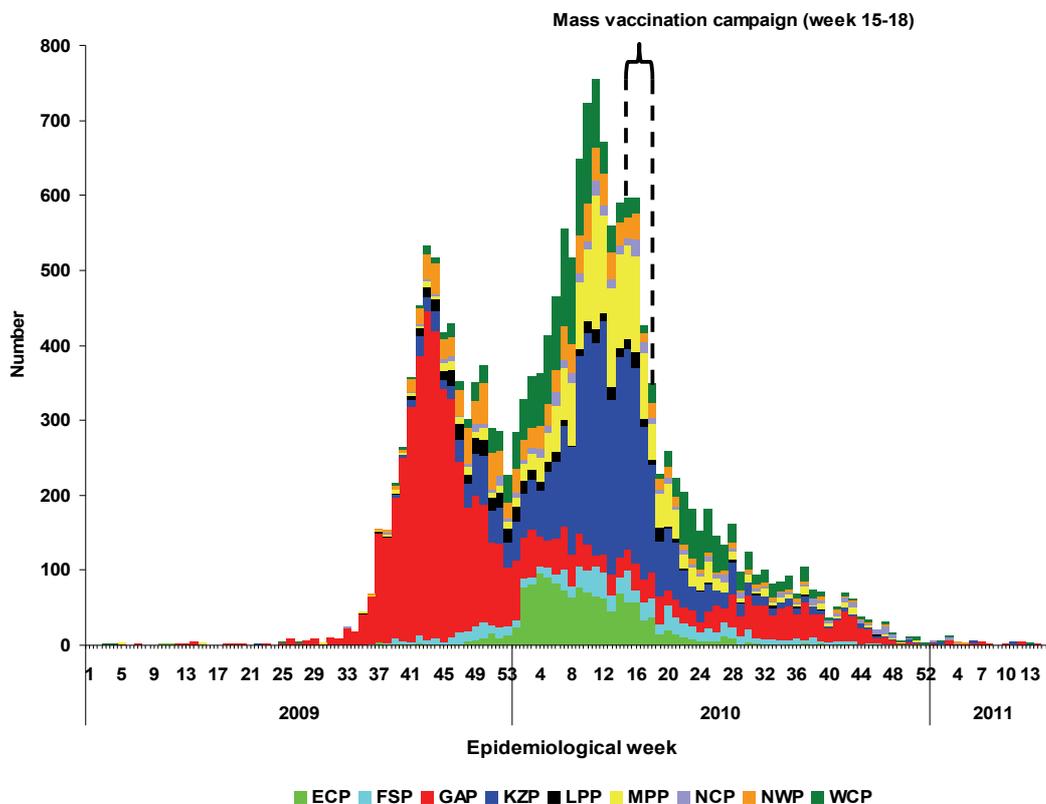
Source: Travel Health Unit, NICD-NHLS

Measles

There have been 15 additional laboratory confirmed measles cases since the last published Communiqué, bringing the total to 18 420 cases from January 2009 to 4 April 2011. Cases were reported from all nine provinces, with Gauteng (31%, 5 759/18 420), KwaZulu-Natal (23%, 4 273/18 420) and Western Cape (11%, 2 010/18 420) provinces accounting for the highest proportions of the cumulative total (Figure 1). Since January 2011, the number of cases reported each week has declined to rela-

tively low numbers bringing the total number of measles IgM positive cases for the year 2011 to 61. These cases were reported from eight of the nine provinces (no cases were reported from Mpumalanga Province). Where age was known (90%, 55/61), children < 1 year of age accounted for 60% (33/55) of the cases, with 40% (22/55) occurring in those aged < 9 months.

Source: Divisions of Epidemiology and Virology, NICD-NHLS



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 1: Measles IgM positive results per province: South Africa, January 2009 to 4 April 2011

Travel-associated malaria

It is important that those who are travelling to risk areas during the upcoming holidays take effective precautions against malaria.

Many people travel to other African countries during the Easter holiday season, so healthcare workers must obtain a thorough travel history

and include malaria in the differential diagnosis of any febrile illness in such cases. African countries where malaria is endemic (either in parts/all of the country) include: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo (DRC), Congo (Brazzaville),

Côte d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mayotte, Mozambique, Namibia, Niger, Nigeria, Rwanda, São Tomé and Príncipe, Senegal, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia and Zimbabwe.

In South Africa, the malaria season is between September and May. During the first quarter of 2011 (that is, from January to March), 4 560 cases of malaria were identified, versus 2 681 cases for the same period in 2010 (an overall 41% increase in cases). Many of these cases were imported with a history of travel to other African countries.

Appropriate preventive measures need to be taken if travelling to malaria risk areas within or outside of South Africa. This includes both mosquito avoidance measures (use of insecticide-treated bed nets, use of DEET-containing insect repellents, wearing long-sleeved clothing, staying indoors after dusk, etc.) and chemoprophylaxis.

Current malaria chemoprophylaxis recommendations for travel in southern Africa include three regimen options: mefloquine, doxycycline or atovaquone-proguanil (Malaril®).¹

According to national guidelines,² artemether-lumefantrine (Coartem®) is first-line treatment for uncomplicated falciparum malaria (except in children < 6 months of age and in the first trimester of pregnancy). Alternatively, quinine plus either doxycycline or clindamycin can be used.

Quinine plus clindamycin is the treatment of choice in uncomplicated malaria cases for those in the first trimester of pregnancy and in children ≤ 5kg. Intravenous quinine should be used for cases of severe malaria. Where available, intravenous artesunate should be used for non-pregnant adults with severe malaria.

References:

1. South African National Department of Health. Guidelines for the Prevention of Malaria in South Africa (2009). http://www.doh.gov.za/docs/factsheets/guidelines/prevention_malaria09.pdf
2. South African National Department of Health. Guidelines for the treatment of malaria in South Africa (2010). <http://www.doh.gov.za/docs/factsheets/guidelines/malaria/treatment/guidelines2010.pdf>

Source: Public Health Registrars, University of the Witwatersrand; Outbreak Response and Travel Health Units, 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
Cholera Americas, Africa and Asia	Haiti has reported an upswing in the incidence of new cholera cases with the beginning of the rainy season. Over 400 000 cases and 4 000 deaths have been reported since the outbreak began following the 2010 earthquake. The neighbouring Dominican Republic has observed 650 cases and 7 deaths during this period. Increased cholera activity has additionally been reported across Africa (Ghana, Zimbabwe, Congo DR, Burundi, Nigeria and Somalia) and Asia (Malaysia, Papua New Guinea, Philippines and India).	Cholera is transmitted through the faecal-oral route, and primarily through contaminated water. Travellers are urged to take precautions when consuming food and water, utilise water purification tablets where needed, and practice good hand hygiene. Vaccine is not routinely recommended for travellers. ¹

Disease & Countries	Comments	Advice to travellers
<p><u>Avian influenza A/(H5N1)</u> Worldwide</p>	<p>As of 11 April 2009, WHO reported a total of 549 cases and 320 deaths due to avian influenza A/ (H5N1) infection worldwide. Of these, 33 cases and 14 deaths have occurred during 2011 across four countries: Bangladesh (2 cases), Cambodia (4 cases), Egypt (22 cases) and Indonesia (5 cases).</p> <p>Few avian influenza viruses have crossed the species barrier to infect humans. Of these, H5N1 has caused the greatest number of cases of severe disease and human deaths. Disease following infection with H5N1 follows an unusually aggressive clinical course. Patients deteriorate rapidly with the common development of primary viral pneumonia and multi-organ failure, and fatalities are frequent.</p>	<p>Most of these cases have resulted from people having direct or close contact with H5N1-infected poultry or H5N1-contaminated surfaces. Travellers are advised to avoid contact with live poultry markets, poultry farms and dead wild birds when visiting these areas.</p>
<p><u>Ross River virus and Murray Valley encephalitis virus</u> Australia</p>	<p>Recent floods and increased mosquito activity in recent months have resulted in comparatively high incidence rates of Ross River virus (RRV) infection in Western Australia (including Perth), South Australia and Victoria states. From 1 January to 19 April 2011, the Australian Notifiable Disease Surveillance System reported a total of 3173 cases. In addition, 5 cases of the relatively more severe Murray Valley encephalitis (MVE) virus infection were reported. Two German travellers were recently diagnosed with RRV infection upon return from a visit to Australia.</p>	<p>RRV and MVE are zoonotic viral infections, which are transmitted from their animal hosts to humans by mosquitoes. The majority of infections with both viruses are asymptomatic or result in a mild “influenza-like” illness. Among symptomatic patients, RRF may be characterised by polyarthrits (90% of cases) and less frequently a maculopapular rash (50% of cases). A small proportion of patients with MVE infection develop encephalitis, which may be fatal. Travellers should protect themselves from mosquito-bites when visiting these areas.²</p>

- 1.Prevention of food and waterborne diseases: drink water that is bottled or bring it to a rolling boil for 1 min. Bottled carbonated water is safer than uncarbonated water. Avoid ice and food products (e.g. ice cream) that are potentially 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.
- 2.Vector-borne transmission by mosquitoes. 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.

References: ProMED-Mail (www.promedmail.org), World Health Organization (www.who.int), and Centers for Disease Control and Prevention (www.cdc.gov), last accessed 2011/04/19.

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



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; Private Bag X4, Sandringham, 2131, South Africa